THE AGENCY'S PROGRAMME AND BUDGET FOR 1995 AND 1996

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INTERNATIONAL ATOMIC ENERGY AGENCY

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EXECUTIVE PART (PART I)
CONTENTS

ANNEXES

List of Abbreviations Not Locally Explained in the Text

ABACC	Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials
ADEX	Division of External Relations
ADLG	Legal Division
ADPI	Division of Public Information
ADPU	Division of Publications
ALADDIN	A Labelled Atomic Data Interface
AQCS	Analytical Quality Control Service
ARCAL	Regional Co-operative Arrangements for the Promotion of Nuclear Science and Technology in Latin America
ASCOT	Assessment of Safety Culture in Organizations Team
ASSET	Assessment of Safety Significant Events Team
C/S	Containment and surveillance
CEC	Commission of the European Communities
CRP	Co-ordinated research programme
CT	Computed tomography
DECADES	Databases and Methodologies for Comparative Assessment of Different Energy Sources for Electricity Generation
DNA	Deoxyribonucleic acid
DP	Data processing
EBRD	European Bank for Reconstruction and Development
ELISA	Enzyme linked immunosorbent assay
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
EURATOM	European Atomic Energy Committee
FAO	Food and Agriculture Organization of the United Nations
FENDL	Fusion Evaluated Nuclear Data Library
IAEA-MEL	IAEA Marine Environment Laboratory
IBRD	International Bank for Reconstruction and Development
ICGFI	International Consultative Group on Food Irradiation
ICRP	International Commission on Radiological Protection
ICTP	International Centre for Theoretical Physics
IEA	International Energy Agency (OECD)
IEC	International Electrotechnical Commission
IIASA	International Institute for Applied Systems Analysis
ILO	International Labour Organisation
IMO	International Maritime Organization
INES	International Nuclear Event Scale
INIS	International Nuclear Information System
INSAG	International Nuclear Safety Advisory Group
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IRS	Incident Reporting System
ISI	In-service inspection
ISO	International Organization for Standardization
ITER	International Thermonuclear Experimental Reactor
ITER EDA	ITER Engineering Design Activities
LAN	Local area network
LEU	Low enriched uranium
LMFR	Liquid metal cooled fast reactor
LWR	Light water reactor
MOX	Mixed oxide
NDA	Non-destructive assay
NDE	Non-destructive evaluation
NDT	Non-destructive testing
NEA	Nuclear Energy Agency (OECD)
NENF	Division of Nuclear Fuel Cycle and Waste Management
NENP	Division of Nuclear Power

NENS	Division of Nuclear Safety
NESI	Division of Scientific and Technical Information
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NUSS	Nuclear Safety Standards
NUSSAG	Nuclear Safety Standards Advisory Group
OECD/NEA	Nuclear Energy Agency of the Organisation for Economic Co-operation and Development
OIE	Office International des Epizooties
OLADE	Organizatión Latinoamerica de Energía
OPEC	Organization of the Petroleum Exporting Countries
OSART	Operational Safety Review Team
PAHO	Pan American Health Organization
PCR	Polymerase chain reaction
PET	Positron emission tomography
PRIS	Power Reactor Information System
PSA	Probabilistic safety assessment
RADWASS	Radioactive Waste Safety Standards
RBMK	Light water cooled, graphite moderated reactor
RCA	Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology
RIA	Radioimmunoassay
RIAL	Agency Laboratory, Seibersdorf
RIHU	Division of Human Health
RIML	Budget code for IAEA-MEL
RIPC	Division of Physical and Chemical Sciences
SAGSTRAM	Standing Advisory Group on the Safe Transport of Radioactive Materials
SAL	Safeguards Analytical Laboratory
SG	Department of Safeguards
SGCP	Division of Concepts and Planning
SGDE	Division of Development and Technical Support
SGSEE	Effectiveness Evaluation Section (Safeguards)
SGIT	Division of Information Treatment
SGOP	Divisions of Operations
SGSPR	Programme and Resources Section (Safeguards)
SIT	Sterile insect technique
SPET	Single photon emission tomography
SSAC	State System of Accounting for and Control of Nuclear Material
SSDL	Secondary Standard Dosimetry Laboratory
TACF	Technical Assistance and Co-operation Fund
TC	Technical Co-operation
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNIPEDE	International Union of Producers and Distributors of Electrical Energy
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
VAMP	Validation of Environmental Model Predictions
VIC	Vienna International Centre
WAMAP	Waste Management Advisory Programme
WANO	World Association of Nuclear Operators
WATRP	Waste Management Assessment and Technical Review Programme
WEC	World Energy Council
WHO	World Health Organization
WMO	World Meteorological Organization
WWER	Water cooled and moderated reactor
XRF	X ray fluorescence

INTRODUCTION

1. In accordance with Article XIV.A of the Statute, the Board of Governors hereby submits to the General Conference the Agency's programme and budget estimates for 1995 and 1996. The Board requests the General Conference to adopt the draft resolutions in respect of 1995 set out in Annex VI.

2. The budget estimates for 1996 have been prepared with the same degree of detail and accuracy as those for 1995 and are considered to be a realistic assessment of the financial resources which will be necessary for the implementation of the 1996 programme. They may, however, require adjustment as a result of possible changes in programme emphasis or of factors outside the control of the Agency. As regards Safeguards, the estimates for 1996 do not cover all anticipated inspection requirements under existing or foreshadowed Safeguards agreements. Nor has budget allocation been made for new developments which may require additional resources to cover activities such as unilateral offers to place military stockpiles of plutonium under Agency safeguards or the proposal to establish a multilateral agreement on the cut-off of weapons grade nuclear material production and its verification by the Agency. Accordingly, the Secretariat will at a later stage make proposals in relation to anticipated resource requirements in 1996 and the method for their funding. The estimates for 1996 will be presented to the General Conference at its thirty-ninth session.

3. The preparation of the 1995-96 Programme and Budget proposals took place in parallel with the preparation of the draft Medium Term Plan for 1995-2000. This offered some advantages in terms of encouraging a longer term perspective in the drawing up of proposals, and the use of advisory groups to consider both sets of proposals at the same time. The preparation of proposals also built on earlier work done for the draft Medium Term Plan for 1993-98 and comments thereon; advice received from various external advisory groups; the results of internal review and evaluation mechanisms; a rigorous process of internal review of programme proposals; and advice and comments received from Member States on the earlier draft of the Programme and Budget. It is expected that in future years this process with benefit from the expanded Agency wide Programme Performance Appraisal System.

4. In preparation of the programme and budget proposals the Secretariat was guided by the request of the General Conference contained in Resolution GC(XXXVII)/RES/618 to take account of the views of the conference on the questions of strengthening the main activities of the Agency. It was also guided by the requests of the General Conference in its Resolution GC(XXXVI)/RES/596 that in preparing future programmes and budgets the Director General continue to adhere to Articles II and III.A of the Statute and be guided inter alia by resolution GC(XXXV)/RES/569 concerning the strengthening of the Agency's main activities; and that he inform the General Conference at its thirty-eighth regular session about the actions taken to implement this resolution.

5. The Programme and Budget document summarizes proposals by Programme and Subprogramme. Additional programme detail is contained in the Management Part of the document. Additional background detail on considerations underlying the proposals is contained in the draft Medium Term Plan circulated under cover of a Note by the Secretariat dated 21 December 1993. The Programme and Budget document also summarizes by Subprogramme the major achievements of the four years preceding the new biennium. Additional background on the activities and achievements of previous years are to be found in the Agency's Annual Reports, and in the annual Programme and Budget Performance Reports. Both the Annual Reports and the Programme and Budget Performance Reports are structured along the lines of the Programme and Budget to facilitate comparisons and evaluation. It is recognized that strict comparability has been made more complicated by the need in recent years to establish deferred programmes. The deferral of programme activity was in response to the late payment of contributions by a number of Member States. Proposals are before the Board of Governors which would enable the Agency to return to full or near full implementation of programme in 1995.

FORMAT

6. The general structure of the Agency's Programme and Budget document used in previous years has been retained. The information has been divided into two separate documents in order to improve readability without sacrificing any of the detail.

7. Part I contains an outline of achievements during the past four years, descriptions of the main activities planned for the biennium (by subprogramme) and concise budgetary information. Lists of symposia and seminars, a summary of the planned outputs, the draft resolutions, summary tables of budget estimates, staffing tables and the organizational chart can be found in the annexes.

8. Part II contains detailed programme and budget information of the type required by programme managers. It is an internal Secretariat document, but will be made available to Member States upon request. It consists mainly of tables and will be issued in English only.

9. In order that Member States may gain a comprehensive picture of the resources available for implementing projects, estimates of extrabudgetary and Technical Co-operation resources are shown in addition to the Regular Budget figures. The extrabudgetary amounts and TC resources have been estimated on the basis of previous experience and existing trends.

BUDGETARY MATTERS

Exchange Rate

10. For the purpose of presenting the Regular Budget estimates for 1995 and 1996, an exchange rate of AS 12.70 Austrian schillings to the United States dollar has been used. This

rate was used in the programme and budget document for 1993-94 (GC(XXXVI)/1006) and in the 1994 budget document (GC(XXXVII)/1062). It was close to the market rates prevailing during the period of budget preparation. In order to facilitate comparison, actual 1993 expenditures are presented at the same exchange rate. All figures from previous years in the document are therefore directly comparable with those for 1995 and 1996.

Organizational Structure by Department

11. As can be seen from the organizational chart in Annex X, the Division of Publications has been transferred from the Department of Technical Co-operation to the Department of Administration. This is reflected in Annex VIII, Table 64, the Regular Budget by Department.

The Regular Budget for 1995

12. The total of the Regular Budget estimates for 1995 as shown in Table 63, the Regular Budget by Appropriation Section, is $211 557 000 at an exchange rate of AS 12.70 to the dollar and at 1995 prices. The total of $211 557 000 consists of the Regular Budget for Agency programmes in Appropriation Sections 1 to 7 ($205 517 000) and of Reimbursable Work for Others, Appropriation Section 8 ($6 040 000). The Regular Budget by Department is shown in Table 64 and by item of expenditure in Table 65.

13. Efforts have been made in the preparation of the budget estimates to strengthen the Agency's main activities as stipulated by General Conference resolution GC(XXXVII)/RES/618. Within the overall zero real growth restrictions, particular attention has been given to cost reductions and efficiency gains. Shifts of resources between programme areas are possible only to a limited extent in the absence of a general agreement among Member States about which activities should be accorded lower priority.

14. In the preparation of the programme and budget estimates for 1995-96, account has also been taken of two General Conference resolutions, i.e. GC(XXXVII)/RES/616, Practical Utilization of Food Irradiation in Developing Countries, and GC(XXXVII)/RES/617, Plan for Producing Potable Water Economically. In respect of the former resolution, specific tasks have been included in the programme to be funded by the Regular Budget and the model projects will be implemented with TC resources. Consultations have been held with interested Member States and a larger meeting will be arranged in 1994 in respect of the latter resolution. The purpose of the meeting will be to review the interest of individual countries and organizations and to formulate a programme to be reported to the 1994 General Conference. Depending on the General Conference's advice, some activities of the 1995-96 programme on the plan for potable water may have to be revised.

15. The Secretariat's efforts to achieve cost reductions and efficiency gains have resulted in an amount of approximately $1 million, which was redeployed to strengthen priority areas. In INIS, the nuclear data area and publishing, savings and a redirection of programme elements are facilitated by technological advances (about $670 000), attempts to attain reduced airfares (without lowering the United Nations travel standard) and economies in the Agency's operational costs (about $390 000) are planned.

16. These savings and efficiency gains have been used to fund additional activities in priority areas such as Waste Management, Industrial Applications, Soil Fertility, Irrigation and Crop Production and Applied Radiation Biology and Radiotherapy. Measure will also be taken in the area of Technical Co-operation, mainly to cover the creation of a separate Section for eastern Europe and for the support of model projects.

Comparison by Major Programme and Programme

17. Table 2 shows expenditure increases and decreases for 1995 and 1996 by major programme and programme. Tables providing a further breakdown to the subprogramme level are included in individual programmes in Part I.

18. No significant changes in the programme structure have been made for the 1995-96 budget cycle. Changes have, however, occurred in respect of subprogrammes and projects. Such changes have been annotated in the tables in Part I under the subprogramme or project title.

19. Expenditure increases are foreseen in Major Programme 1, Nuclear Power, the Fuel Cycle and Waste Management ($506 000), and in Nuclear Applications ($53 000). Expenditure reductions have been made in Major Programme 3, Nuclear Safety and Radiation Protection ($112 000), and in S, Direction and Support ($447 000). The increases in Major Programme 1 are mainly in Programme C, Radioactive Waste Management but also in A, Nuclear Power and B, Nuclear Fuel Cycle.

20. The increases in Major Programme 2, Nuclear Applications, are mainly in Programme D, Food and Agriculture and F, Industry and Earth Sciences, partly offset by decreases in Programme G, Physical and Chemical Sciences. The decrease in Major Programme 3, Nuclear Safety and Radiation Protection, is mainly in Programme I, Safety of Nuclear Installations, but also in Programme H, Radiation Safety.

21. Major Programme 4 is kept at zero real growth compared to 1994. Increases in Safeguards Operations are offset by decreases in Support and Development.

22. In the area of Direction and Support an expenditure increase in Technical Co-operation Servicing and Co-ordination is more than offset by large expenditure decreases in INIS and General Services.

Comparison by Appropriation Section

23. The Appropriation Sections are presented in summary form in Table 63, Annex VIII of Part I. Tables with details by Division and item of expenditure are included in Section 2 of Part II.

24. The Regular Budget estimates for the Agency's programmes for 1995 at 1994 prices amount to $195 018 000, representing zero real growth compared to 1994. Expenditure increases are foreseen for Appropriation Section 1, Technical Assistance and Co-operation ($191 000), and Appropriation Section 3, Research and Isotopes ($131 000). Expenditure decreases are foreseen in Appropriation Section 2, Nuclear Energy and Safety ($81 000), Appropriation Section 6, Executive Management, Administration and General Services ($208 000) and Appropriation Section 7, Unallocated Services ($32 000).

25. Appropriation Section 8, Reimbursable Work for Others, has to be funded from income from other organizations. An increase is foreseen in respect of Data Processing Central Services ($1 024 000), which the Agency will provide for UNIDO in 1995 and future years. A decrease in the work performed by the Agency is foreseen in respect of printing for UN and UNIDO ($226 000) .

Comparison with Actual 1993 Expenditures

26. To facilitate comparison with the budget estimates for 1995, actual expenditures for 1993 are presented at the same exchange rate as the 1995 budget, i.e. AS 12.70 to US$1. Consequently, they are not identical with the figures for actual expenditures which appear in the accounts document and for which different exchange rates are used, in accordance with established procedures; disbursements are recorded at the United Nations exchange rate for the month in which they were incurred and unliquidated obligations are recorded at the exchange rate for December of the year in question.

27. As was done last year, deferred programme activities have been included in the figures for actual expenditures as it is expected that they will be implemented and become disbursements. Their treatment is thus similar to unliquidated obligations, which are also included in actual expenditures.

Harmonization

28. In compliance with General Conference resolution (XXXVI)/RES/581 titled, Harmony and Compatibility of Programme and Budget and Accounts Documents, which was adopted by the General Conference in 1992, the feasibility of basing the Regular Budget Appropriation Sections on the programme structure instead of the organizational (divisional) structure has been studied and the matter is being submitted to the Agency's Policy Making Organs in a separate paper. In the draft Regular Budget resolution for 1995, Appropriation Sections are therefore, as in the past, based on the Agency's organizational structure.

Additional High Priority Activities

29. During the budget preparation for 1995 and 1996, it became apparent that a large number of activities considered to be of high priority could not be accommodated within the expected level of Regular Budget funding. Those additional high priority activities for which there is reasonable expectation that it may be possible to attract extrabudgetary resources have been retained in the present document. A summary is provided in Annex V, Table 60.

Categories of Output Used in the Programme Budget for 1995

30. The concept of output is used to categorize the principal activities involved in implementing the approved programmes. From this Member States can see what final products they can expect from the Agency. A summary is provided in Table 57 Annex III of Part I. Details for each project are provided in the Project Information Sheets of Section 1 of Part II.

31. "Major Meetings" reflect the costs of providing a forum for the exchange of information (conferences, symposia, seminars), including the staff costs required for preparing and holding meetings. Meetings such as advisory group and technical committee meetings are included in this category only if they are associated with the planning of a conference, symposium or seminar.

32. "Database" reflects the costs associated with setting up and maintaining specific databases such as the Power Reactor Information System, Nuclear Fuel Cycle Information System, International Nuclear Information System, International Uranium Geology Information System and Computer Index of Atomic and Molecular Data, and the IAEA Safeguards Information System. Included are staff costs, data processing and other computer costs and the costs of meetings held to exchange information or to provide database training.

33. "Publications" reflect the costs of preparing reports, guidelines, proceedings, manuals and other publications. These costs include costs of staff, consultants and printing. The costs of advisory group and technical committee meetings held for the purpose of the preparation of publications are included in this category.

34. "Standards and Regulations" mainly reflect the costs of Safety Series documents. As in the case of "Publications", the costs associated with "Standards and Regulations" include costs of staff, consultants, printing, advisory group meetings and technical committee meetings. Safeguards standardization activities are included in this category.

35. "Safeguards Implementation" relates only to the Department of Safeguards and covers all safeguards implementation activities.

36. "Research and Development" reflects the costs of co-ordinated and other research programmes, including the costs of administration, staff, laboratory services, consultants and the preparation of reports.

37. "Services to Member States" reflect the actual costs of advisory services and missions as well as laboratory and other services which are financed from the Regular Budget, including associated staff costs.

38. "Technical Co-operation Support" reflects the staff costs associated with the support given by the technical Departments to the technical co-operation programme in selecting and

briefing experts, designing training course programmes, evaluating equipment and similar activities. It is a category which includes a broad range of activities and is not restricted to support for technical co-operation projects: part of the costs of the ICTP in Trieste and the Seibersdorf and Monaco Laboratories is considered to represent support for technical co-operation.

Calculation of Major Items of Expenditure in the Regular Budget

39. The main item of expenditure is staff costs, which account for approximately 70% of the Regular Budget. In order to take into account the actual requirements in individual Divisions and programmes as accurately as possible, the projection of staff costs is based on the cost (grade and step) of present incumbents and a forecast of staff turnover. While programme implementation makes it desirable to fill vacant posts with the minimum delay, delays in recruitment cannot be avoided and are taken into account in the budget process. The time that posts are expected to be vacant during the budget year ("lapse and lag") is taken into account and the budget estimates for posts are reduced accordingly. Actual vacancies during 1993 and 1994 cannot be used as a basis for calculating the lapse and lag for 1995 since the high level experienced was the result of expenditure cuts introduced to offset the shortfall in contributions.

40. Common Staff Costs include various non-salary costs which are related to the employment of a staff member, e.g. contributions to the United Nations Joint Staff Pension Fund and health insurance schemes, dependency allowances, education grant, travel on recruitment, termination, home leave and so on. Also, the Agency's contributions to other Common System bodies such as the International Civil Service Commission (ICSC), the Consultative Committee on Administrative Questions (CCAQ) and the Joint Inspection Unit (JIU) are included. The policy regarding Common Staff Costs is to allocate them to individual Divisions and programmes as a percentage of the salaries of established and temporary assistance staff.

41. The Division of General Services is in charge of VIC operating costs and of supplies and equipment for the day to day operation of the organization, and these are charged to its budget.

42. Direct costs such as travel and equipment are charged to Divisions and programmes on an individual basis. Shared costs such as translation, printing and computer programming are allocated to individual Divisions and programmes on the basis of average rates per unit (standard pages in the case of translation, page impressions for printing, and so on) established for each service.

Price Increases

43. Price increases for the items of expenditure making up the Agency's Regular Budget are expected to amount to 5.4% for 1995. Unless otherwise indicated, the 1995 figures shown in the tables include the price increases for 1995. Similarly, 1996 figures include price increases for 1996 of 4.2%.

44. The Agency has for many years followed the policy of "semi-full budgeting", a methodology which has been recognized by the United Nations Organization and its various review bodies, e.g. the Joint Inspection Unit. Trends and expectations are taken into account for salaries and related expenditures which depend on index movements. For all other items, actual increases which have occurred during the past year are recovered.

45. In estimating the salary increases to be included in the budget, the actual movement in the past year is compared with the increases assumed in the budget for that year and the difference is added to or subtracted from the expected increases.

46. Since for other items the actual increases in the previous year are applied to the next budget (i.e. with a two-year delay), the question of comparing projections with actuals does not arise. The 1991 actual increases were applied to the 1993 budget, the 1992 increases to 1994, and now the 1993 actual increases are being applied to 1995.

47. The total price increase for 1995 will amount to 5.4%. For 1994, price increases of 4.8% were included in the estimates. The higher percentage increase for 1995 is mainly attributable to Professional salary increases. After many years of "frozen" professional salaries, ICSC approved an increase in 1993 of 4.8% while the budget estimates had included only 2% for P salary increases (2.3% including increments). The result was a shortfall in Professional salaries in 1993 and 1994. For 1994, the 2.8% of under-budgeted salary increases have to be compensated by leaving posts vacant or by saving on other items of expenditure. As described above, the difference between the budget and the actual increase granted is recovered in 1995 together with the estimated increase for 1995 of 4%. This results in an increase in Professional salaries of 6.8% for Vienna. The Tokyo office, which has been enlarged by a transfer of two Professional posts, requires a larger increase in Professional salaries to take into account the difference in cost of living and the strong appreciation of the Japanese yen against the US dollar while the Austrian schilling depreciated against the dollar, which are reflected in the salary levels. The increase in salaries required for the Tokyo office brings the total average price increase for P salaries to 7.3%.

48. GS salaries are expected to increase by 3.5%. An additional 1% increase is required for step increments for General Service staff. (No additional step increments are required for Professional staff according to a recent analysis). The increase for GS staff is thus expected to be 4.5%. Taking into account the Tokyo office, the average price increase for GS salaries amounts to 4.8%.

49. Common staff costs are kept at 38.8% of salaries as in the 1994 budget. The price increases for Common staff costs are 6.3%, reflecting the higher increase in P salaries and the lower increase in GS salaries.

50. Price increases for temporary assistance are in line with those for established posts; however, no step increments are applicable.

51. Price increases in travel costs average 4.9% for staff travel and 3.3% for non-staff travel. The figures are based on weighted averages for fare and per diem increases

worldwide. The increase of airfares averages 3.4%. The daily subsistence allowance for staff travel requires an increase of about 7%, that for non-staff travel an increase of 3.5%. The low percentage is attributable to the fact that the ICSC has not yet approved the annual increase in the Daily Subsistence Allowance rate for Vienna. Interpretation services which are provided by the United Nations have increased by 5.7%. For Training a price increase of 6.0% is required.

52. For leased or rented equipment an average increase of 4.0% has been experienced, while purchase prices for equipment have increased by 3.2% and for supplies by 4.1%, based on the experience of the Agency's purchasing officers.

53. The increase in general operating expenses of 3.6% is an average of VIC operating cost increases of 4.3% applied by UNIDO, which is in charge of VIC maintenance and operation, and other items of expenditure which are incurred directly by the Agency (there was no increase in communications and only 2.5% in utilities). Price increases for contracts average 3.4%, for research and technical contracts 3.8%. The increase of 4.2% for "miscellaneous" is the result of higher increases in insurance premiums and somewhat lower increases in trade and transportation.

54. The increases in respect of shared services, i.e. translation, printing, data processing applications, etc... , reflect the increases in individual items of expenditure described above. The increases vary between 4.5% and 5.5%, depending on the share of Professional staff costs.

Establishment of a New Equipment Replacement Fund (ERF) for Data Processing Systems

55. The Board approved the establishment of the Equipment Replacement Fund in 1992 and the particular terms of its funding in 1993. It is expected that the amount of $1.8 million will be required in 1996 for the enhancement or replacement of the Agency's decentralized data processing system.

56. The Agency has agreed to resume the provision of data processing services for UNIDO and will be reimbursed for the additional expenditure, including approximately 10% or $100 000 for 1995 and for 1996 as UNIDO's contribution to the subsequent phase of replacement or enhancement of data processing systems which is foreseen for the year 2000. As proposed in a separate document, it seems appropriate to use the model of the Equipment Replacement Fund beyond the year 1996 and to establish a new ERF to keep the contributions from UNIDO for later use. Table 123, Summary of Cost for Data Processing Services in Part II, shows the estimates for total data processing services including the cost of providing services to UNIDO. The contribution to the Equipment Replacement Fund is shown as a separate item of expenditure in line with the presentation in the 1993 budget. The contributions to the new ERF of $100 000 per annum will be funded from reimbursements under Reimbursable Work for Others.

Extrabudgetary Resources

57. In general, the dollar amounts for extrabudgetary resources are tentative and represent the best estimates that can be made at present. Some amounts represent requests made by the Agency and some are reasonable expectations based on past experience; several are still subject to confirmation.

58. The budget tables include, at the project level, amounts of extrabudgetary resources expected to be available for the Agency to carry out its programme in 1995 and 1996 without reference to prospective donors. This information is recapitulated in Tables 1 and 4, Summary of total resources by programme, and in the Attachments to Tables 1-4, Total Resources for Implementation in 1995 and 1996, in which funds from other United Nations organizations are shown separately. Table 4 provides details of expected extrabudgetary resources by donor country. Apart from confirmed contributions, reasonable expectations have been included and footnoted. In cases where estimates of extrabudgetary resources have been included in projects although the donor countries are not yet known, a corresponding entry has been made in the summary table.

Target for Voluntary Contributions to the Technical Assistance and Co-operation Fund

59. The provision of technical assistance by the Agency to its developing Member States is financed from the Technical Assistance and Co-operation Fund (TACF), which receives its income mainly in the form of voluntary contributions, for which a target is set each year. In line with the indicative planing figures established by the Board for the years 1993, 1994 and 1995, providing for an annual increase of $3.0 million, the Board recommends that the target for 1995 be established at $61.5 million. Taking into account funds from other sources estimated at $1 million, it is expected that the Fund will amount in total to $62.5 million.

Working Capital Fund

60. The Agency's Working Capital Fund remained, with minor variations, at $2 million from 1958 to 1988. It was increased by $2 million in each of the subsequent years, reaching a level of $12 million in the 1993 budget.

61. For 1994, the Board did not recommend a further increase in the level of the Fund as there was no cash surplus available for allocation to Member States which would offset the additional burden. Since there was no increase for 1994, the Board recommends for 1995 that the Fund be increased by $4 million to the level of $16 million.

62. The Secretariat continues to consider that a Working Capital Fund level equivalent to one month's expenditure — approximately $18 million at the prevailing UN rate of exchange — would be appropriate.

Staffing Tables

63. In Part I summary tables of staffing are provided (Tables 67-73). In line with previous practice, they are repeated in Section 2 of Part II together with detailed descriptions of changes and justifications. Requests for additional staffing and the reclassification of existing posts have been scrutinized through the internal review process established for the purpose of reviewing human resource requirements in the light of programme trends and developments as well as the overall workload situation and staff utilization.

64. For 1995 all staff requirements can be met by internal transfers. It will however be necessary to upgrade two Professional posts to the level required by the ICSC Master Standard.

REPORT ON THE BUDGET TO THE GENERAL ASSEMBLY OF THE UNITED NATIONS

65. In accordance with Article XVI of the Agency's relationship agreement with the United Nations (INFCIRC/11, Part I), the budget will be reviewed by the Advisory Committee on Administrative and Budgetary Questions, which will report on the administrative aspects thereof to the General Assembly of the United Nations.

TABLES 1 – 4

RESOURCES FOR PROGRAMME IMPLEMENTATION FROM THE REGULAR BUDGET AND OTHER UN ORGANIZATIONS IN 1995 AND 1996

Table 1

	Programme / Major Programme	1995 Regular Budget estimates	%	Funds from other UN organizations a/	1996 Regular Budget estimates	%	Funds from other UN organizations a/
1.	**NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT**						
A.	Nuclear Power	5 011 000	2.4	–	5 256 000	2.5	–
B.	Nuclear Fuel Cycle	2 595 000	1.3	–	2 641 000	1.2	–
C.	Radioactive Waste Management	6 173 000	3.0	–	6 506 000	3.0	–
X.	Comparative Assessment of Nuclear Power and Other Energy Sources	2 016 000	1.0	–	2 118 000	1.0	–
	Major Programme 1	15 795 000	7.7	–	16 521 000	7.7	–
2.	**NUCLEAR APPLICATIONS**						
D.	Food and Agriculture	10 098 000	4.9	2 546 000	10 576 000	4.9	2 646 000
E.	Human Health	5 683 000	2.8	1 450 000	5 882 000	2.8	1 500 000
F.	Industry and Earth Sciences	3 400 000	1.7	–	3 562 000	1.7	–
G.	Physical and Chemical Sciences	8 312 000	4.0	374 000	8 608 000	4.0	374 000
	Major Programme 2	27 493 000	13.4	4 370 000	28 628 000	13.4	4 520 000
3.	**NUCLEAR SAFETY AND RADIATION PROTECTION**						
H.	Radiation Safety	4 400 000	2.1	–	4 556 000	2.1	–
I.	Safety of Nuclear Installations	6 693 000	3.3	–	7 041 000	3.3	–
	Major Programme 3	11 093 000	5.4	–	11 597 000	5.4	–
4.	**SAFEGUARDS**						
J.1.	Safeguards Operations	56 033 000	27.3	–	58 761 000	27.4	–
J.2.	Support and Development	14 104 000	6.8	–	14 305 000	6.7	–
J.3.	Safeguards Management:						
	Planning, Direction, Co-ordination and Control	[323 000] b/	–	–	[338 000] b/	–	–
	Effectiveness Evaluation	998 000	0.5	–	1 040 000	0.5	–
	Programme and Resources	1 287 000	0.6		1 342 000	0.6	
	Major Programme 4	72 422 000	35.2	–	75 448 000	35.2	–
S.	**DIRECTION AND SUPPORT**						
S.1.	General Management and Secretariat of the Policy-making Organs	11 933 000	5.8	3 663 000	12 432 000	5.8	3 663 000
S.2.	Administration	15 683 000	7.6	–	16 361 000	7.7	–
S.3.	Technical Co-operation Servicing and Co-ordination	11 795 000	5.7	–	12 380 000	5.8	–
S.4.	General Services	22 184 000	10.8	–	23 105 000	10.8	–
S.5.	Specialized Service Activities	7 937 000	3.9	–	8 123 000	3.8	–
S.6.	Support Services c/	9 182 000	4.5	–	9 495 000	4.4	–
	Major Programme S	78 714 000	38.3	3 663 000	81 896 000	38.3	3 663 000
	Agency's Programmes	205 517 000	100.0	8 033 000	214 090 000	100.0	8 183 000
	Plus: Reimbursable Work for Others	6 040 000			6 298 000		
	Total Budget	211 557 000		8 033 000	220 388 000		8 183 000
	SOURCE OF FUNDS:						
	Assessment on Member States	202 703 000		–	211 256 000		–
	Income from reimbursable work for others	6 040 000		–	6 298 000		–
	Other miscellaneous income	2 814 000		–	2 834 000		–
	Other UN organizations	–		8 033 000	–		8 183 000
	Total Budget	211 557 000		8 033 000	220 388 000		8 183 000

a/ Funds from FAO, UNEP, UNESCO, UN etc., but excluding UNDP.

b/ Included in S.1. – General Management and Secretariat of the Policy-making Organs.

c/ Includes only the Library, DP Central Services and Publishing Services, all other services having been allocated to the user programmes.

THE REGULAR BUDGET
Summary by Programme and Major Programme
Table 2

	Programme / Major Programme	1994 Budget (Adjusted)	Expenditure increase/(decr.)	%	1995 at 1994 prices	Expenditure increase/(decr.)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
1.	**NUCLEAR POWER, FUEL CYCLE AND RADIOACTVE WASTE MANAGEMENT**											
A.	Nuclear Power	4 681 000	77 000	1.6	4 758 000	40 000	0.8	4 798 000	5.3	5 011 000	4.0	5 256 000
B.	Nuclear Fuel Cycle	2 386 000	82 000	3.4	2 468 000	(51 000)	(2.1)	2 417 000	5.1	2 595 000	3.9	2 641 000
C.	Radioactive Waste Management	5 519 000	365 000	6.6	5 884 000	93 000	1.6	5 977 000	4.9	6 173 000	3.8	6 506 000
X.	Comparative Assessment of Nuclear Power and Other Energy Sources	1 933 000	(18 000)	(0.9)	1 915 000	25 000	1 3	1 940 000	5.3	2 016 000	3.7	2 118 000
	Major Programme 1	14 519 000	506 000	3.5	15 025 000	107 000	0.7	15 132 000	5.1	15 795 000	3.9	16 521 000
2.	**NUCLEAR APPLICATIONS**											
D.	Food and Agriculture	9 528 000	107 000	1.1	9 635 000	61 000	0.6	9 696 000	4.8	10 098 000	4.1	10 576 000
E.	Human Health	5 403 000	17 000	0.3	5 420 000	(29 000)	(0.5)	5 391 000	4.9	5 683 000	4.1	5 882 000
F.	Industry and Earth Sciences	3 112 000	127 000	4.1	3 239 000	24 000	0.7	3 263 000	5.0	3 400 000	4.1	3 562 000
G.	Physical and Chemical Sciences	8 126 000	(198 000)	(2.4)	7 928 000	(53 000)	(0.7)	7 875 000	4.8	8 312 000	4.3	8 608 000
	Major Programme 2	26 169 000	53 000	0.2	26 222 000	3 000	0.01	26 225 000	4.9	27 493 000	4.1	28 628 000
3.	**NUCLEAR SAFETY AND RADIATION PROTECTION**											
H.	Radiation Safety	4 220 000	(47 000)	(1.1)	4 173 000	(23 000)	(0.6)	4 150 000	5.4	4 400 000	4.1	4 556 000
I.	Safety of Nuclear Installations	6 414 000	(65 000)	(1.0)	6 349 000	68 000	1.1	6 417 000	5.4	6 693 000	4.1	7 041 000
	Major Programme 3	10 634 000	(112 000)	(1.1)	10 522 000	45 000	0.4	10 567 000	5.4	11 093 000	4.1	11 597 000
4.	**SAFEGUARDS**											
J 1.	Safeguards Operations	52 059 000	747 000	1.4	52 806 000	351 000	0.7	53 157 000	6.1	56 033 000	4.2	58 761 000
J.2.	Support and Development	14 134 000	(804 000)	(5.7)	13 330 000	(351 000)	(2.6)	12 979 000	5.8	14 104 000	4.2	14 305 000
J.3.	Safeguards Management:											
	Planning, Direction, Co-ordination and Control a/	[308 000]	–	–	[308 000]	–	–	[308 000]	4.9	[323 000]	4.6	[338 000]
	Effectiveness Evaluation	892 000	50 000	5.6	942 000	–	–	942 000	5.9	998 000	4.2	1 040 000
	Programme and Resources	1 209 000	7 000	0.6	1 216 000	–	–	1 216 000	5.8	1 287 000	4.3	1 342 000
	Major Programme 4	68 294 000	–	–	68 294 000	–	–	68 294 000	6.0	72 422 000	4.2	75 448 000
S.	**DIRECTION AND SUPPORT**											
S.1.	General Management and Secretariat of the Policy-making Organs	11 348 000	(26 000)	(0.2)	11 322 000	–	–	11 322 000	5.4	11 933 000	4.2	12 432 000
S.2.	Administration	14 915 000	(23 000)	(0.2)	14 892 000	–	–	14 892 000	5.3	15 683 000	4.3	16 361 000
S.3.	Technical Co-operation Servicing and Co-ordination	10 994 000	191 000	1.7	11 185 000	75 000	0.7	11 260 000	5.5	11 795 000	4.3	12 380 000
S.4.	General Services	21 433 000	(152 000)	(0.7)	21 281 000	–	–	21 281 000	4.2	22 184 000	4.2	23 105 000
S 5.	Specialized Service Activities	7 958 000	(405 000)	(5.1)	7 553 000	(140 000)	(1.9)	7 413 000	5.1	7 937 000	4.3	8 123 000
S.6.	Unallocated Services and Library b/	8 754 000	(32 000)	(0.4)	8 722 000	(90 000)	(1.0)	8 632 000	5.3	9 182 000	4.5	9 495 000
	Major Programme S	75 402 000	(447 000)	(0.6)	74 955 000	(155 000)	(0.2)	74 800 000	5.0	78 714 000	4.3	81 896 000
Agency's Programmes		195 018 000	–	–	195 018 000	–	–	195 018 000	5.4	205 517 000	4.2	214 090 000
Reimbursable Work for Others		5 085 000	679 000	13.4	5 764 000	–	–	5 764 000	4.8	6 040 000	4.3	6 298 000
Regular Budget		200 103 000	679 000	0.3	200 782 000	–	–	200 782 000	5.4	211 557 000	4 2	220 388 000
Less:	Miscellaneous Income:											
	Reimbursable Work for Others	5 085 000	679 000	13.4	5 764 000	–	–	5 764 000	4.8	6 040 000	4.3	6 298 000
	Other	2 955 000	(174 000)	(5.9)	2 781 000	–	–	2 781 000	1.2	2 814 000	0.7	2 834 000
Assessment on Member States		192 063 000	174 000	0.1	192 237 000	–	–	192 237 000	5.4	202 703 000	4.2	211 256 000

a/ Included in S.1 – General Management and Secretariat of the Policy-making Organs.
b/ Includes only the Library, DP Central Services and Publishing Services all other services having been allocated to the user programmes.

Summary of Income

Table 3

	1993 Actuals	1994 Budget	Increase (decrease)	1995 Budget	Increase (decrease)	1996 Budget
Assessed contributions on Member States	183 837 975	192 063 000	10 640 000	202 703 000	8 553 000	211 256 000
Miscellaneous income						
(a) Income from reimbursable work for others						
Data processing services	534 620	516 000	1 091 000	1 607 000	64 000	1 671 000
Printing services	1 825 309	1 581 000	(166 000)	1 415 000	61 000	1 476 000
Medical services	697 616	903 000	62 000	965 000	40 000	1 005 000
Library services	1 068 464	1 288 000	(30 000)	1 258 000	59 000	1 317 000
Radiation protection services	222 984	269 000	14 000	283 000	12 000	295 000
Translation services	40 987	53 000	3 000	56 000	2 000	58 000
Nuclear Fusion Journal a_/	390 494	475 000	(19 000)	456 000	20 000	476 000
Sub-total	4 780 474	5 085 000	955 000	6 040 000	258 000	6 298 000
(b) Attributable to specific programmes						
Publications of the Agency - INIS	456 571	441 000	(51 000)	390 000	-	390 000
Publications of the Agency - other	565 901	693 000	(73 000)	620 000	20 000	640 000
Laboratory income	169 353	180 000	-	180 000	-	180 000
INIS/AGRIS/Direct Access income	34 296	20 000	7 000	27 000	-	27 000
Amounts recoverable under Safeguards agreements	530 941	500 000	-	500 000	-	500 000
				-		-
Programme support income	224 061	286 000	(21 000)	265 000	-	265 000
Other Service income	852	5 000	(3 000)	2 000	-	2 000
Sub-total	1 981 975	2 125 000	(141 000)	1 984 000	20 000	2 004 000
(c) Not attributable to specific programmes						
Investment and interest income	4 201 004	650 000	-	650 000	-	650 000
Loss on exchange of currencies	(4 467 422)	-	-	-	-	-
Other	250 208	180 000	-	180 000	-	180 000
Sub-total	(16 210)	830 000	-	830 000	-	830 000
Total miscellaneous income	6 746 239	8 040 000	814 000	8 854 000	278 000	9 132 000
TOTAL	190 584 214	200 103 000	11 454 000	211 557 000	8 831 000	220 388 000

a_/ Includes cost of Scientific Journals Unit and related cost of Publishing Services.

EXTRABUDGETARY RESOURCES 1994 - 1996
(as known on 1 June 1994)
Table 4 a /

	Unused balances as at 1 January 1994	1994 Estimate	1995 Estimate	1996 Estimate
Technical Assistance and Co-operation				
a. For TC Projects f/				
Australia (RCA)	308 549	360 000	360 000	360 000 c/
Belgium	234 757	62 000 b/	62 000 c/	62 000 c/
Chile	-	10 000 b/	10 000 c/	10 000 c/
Colombia	2 863	10 000 b/	10 000 c/	10 000 c/
Finland	10 806	-	-	-
France	705 314	517 000	517 000 c/	517 000 c/
Germany	235 155	-	-	-
Italy	58 244	-	-	-
Japan	10 054	90 000	90 000	-
Japan (RCA)	520 334	312 000 b/	312 000 c/	312 000 c/
Korea, Republic of	293 608	67 000 b/	67 000 c/	67 000 c/
Malaysia (RCA)	10 000	10 000	10 000	10 000
Spain	295 160	317 000	320 000 d/	320 000 e/
Sweden	39 526	47 000	-	-
United Kingdom of Great Britain and Northern Ireland	157 586	667 000	650 000	650 000 c/
United States of America	2 019 725	2 000 000 b/	2 000 000 c/	2 000 000 c/
	4 901 681 f/	4 469 000 f/	4 408 000 f/	4 318 000 f/
b. For TC Administration				
Germany	70 000	-	-	-
Japan (RCA)	8 644	-	-	-
United Kingdom of Great Britain and Northern Ireland	23 051	-	-	-
United States of America	68 490	214 000	-	-
Member States not yet identified	-	61 000	380 000	246 000
	170 185	275 000	380 000	246 000
Nuclear Power				
Canada	6 800	-	-	-
Germany	78 000	-	-	-
Netherlands	9 399	132 000	-	-
Spain	-	29 000	-	-
Project on "Technical and Economic Feasibility of Nuclear Desalination"	17 485	-	-	-
United States of America	-	244 000	32 000	-
Member States not yet identified	-	119 000	237 000	228 000
	111 684	524 000	269 000	228 000
Nuclear Fuel Cycle and Waste Management				
France	-	98 000	80 000	-
Japan	38 668	250 000	250 000	-
Korea, Republic of	148 732	75 000	-	-
Spain	90 917	98 000	105 000	-
Sweden	51 493	98 000	-	-
United States of America	80 972	233 000	98 000	-
Member States not yet identified	-	-	115 000	446 000
	410 782	852 000	648 000	446 000
Nuclear Safety				
Finland	7 713	-	-	-
Japan	72 823	324 000	286 000	194 000
Japan (RCA)	93 086	-	-	-
United States of America	112 073	99 000	-	-
Member States not yet identified	-	2 370 000	3 397 000	3 585 000
"Extrabudgetary Project on the Safety of WWER and RBMK Nuclear Power plants"	774 214			
Austria	-	17 000	-	-
Japan	-	1 500 000	-	-
Norway	-	13 000	-	-
United States of America	-	100 000	-	-
Member States not yet identified	-	200 000	2 600 000	1 250 000
	1 059 909	4 623 000	6 283 000	5 029 000

Table 4 (continued)

	Unused balances as at 1 January 1994	1994 Estimate	1995 Estimate	1996 Estimate
Food and Agriculture				
Austria	12 875	-	-	-
Commission of the European Communities (CEC)	-	-	-	-
France	53 687	-	-	-
Germany	96 520	-	-	-
International Consultative Group on Food Irradiation (ICGFI)	98 290	190 000	200 000	200 000
Italy	145 595	280 000	300 000	300 000
Japan (RCA)	7 093	-	-	-
Netherlands	-	-	540 000	-
Norway	27 126	-	-	-
Organization of Petroleum Exporting Countries (OPEC)	14 689	13 000	-	-
Sweden	777 284	400 000	600 000	180 000
United States of America	34 200	-	-	
Member States not yet identified	-	100 000	100 000	1 000 000
	1 267 359	983 000	1 740 000	1 680 000
Human Health				
Australia	-	335 000	-	-
Italy	95 293	80 000	15 000	-
Japan (RCA)	191 198	61 000	48 000	48 000
United States of America	-	150 000	-	-
	286 491	626 000	63 000	48 000
Agency's Laboratory, Seibersdorf	15 361	-	-	-
International Centre for Theoretical Physics				
Brazil	-	15 000	25 000	-
Commission of the European Communities (CEC)	-	533 000	92 000	-
Italy	1 619 536	15 611 000	14 923 000	12 462 000
Japan	-	39 000 c_/	39 000 c_/	39 000 c_/
Kuwait	-	25 000	50 000 c_/	50 000 c_/
		50 000 c_/		
Spain	-	15 000 c_/	15 000 c_/	15 000 c_/
Sweden	-	538 000	564 000	-
UK		19 000	10 000	3 000
	1 619 536	16 845 000	15 718 000	12 569 000
International Laboratory of Marine Radioactivity				
Australia	11 360	-	-	-
Canada	1 510	-	-	-
Commission of the European Communities (CEC)	7 159	151 000	332 000	328 000
International Union for Conservation of Nature and Natural Resources (IUCN)	889	-	-	-
Japan	366 000	1 566 000	-	-
Principality of Monaco	107 007	168 000	145 000	147 000
Regional Organization for the Protection of the Marine Environment (ROPME)	26 123	50 000	53 000	55 000
SO.PRO.MAR SPA	51 734	-	-	-
Sweden	366 497	500 000	100 000	100 000
	938 279	2 435 000	630 000	630 000

Table 4 (continued)

	Unused balances as at 1 January 1994	1994 Estimate	1995 Estimate	1996 Estimate
Safeguards				
Australia	6 751	18 000	-	-
Canada	43 808	350 000	350 000	350 000
Finland	-	240 000	240 000	240 000
France	509 701	370 000	370 000	370 000
Germany	204 228	210 000	210 000	210 000
Japan	139 335	990 000	990 000	990 000
Korea, Republic of	30 000	-	-	-
New Zealand	10 189	20 000	20 000	20 000
Sweden	16 349	80 000	80 000	80 000
United Kingdom of Great Britain and Northern Ireland	160 991	550 000	200 000	200 000
United States of America	1 503 187	3 040 000	2 540 000	2 540 000
	2 624 539	5 868 000 g_/	5 000 000 g_/	5 000 000 g_/
Administration				
Italy	335 405	-	-	-
Japan	176 651	544 000	540 000 c_/	540 000 c_/
Korea, Republic of	-	21 000	-	-
United States of America	83 233	70 000	-	-
	595 289	635 000	540 000	540 000
United Nations Security Council Resolution 687 on Iraq				
United Kingdom of Great Britain and Northern Ireland	13 429	-	-	-
United States of America	54 676	-	-	-
	68 105	-	-	-
TOTAL h_/	9 167 519	33 666 000	31 271 000	26 416 000

Note: Most contributions still require parliamentary approval.

a_/ In addition to the cash resources indicated above, Member States make contributions in kind consisting of cost-free experts and consultants, stipends for fellowships, training courses, etc.

b_/ No fixed commitment has yet been received.

c_/ No firm commitment has been received to date but it is expected that extrabudgetary funding will continue at about the same level as 1993.

d_/ Includes firm commitment of $160 000, but it is expected that extrabudgetary funding will continue at this level.

e_/ Includes firm commitment of $47 000, but it is expected that extrabudgetary funding will continue at this level.

f_/ These figures are not included in the total extrabudgetary resources since they are incorporated in the TC resources shown in the Attachment to Tables 1-4.

g_/ Firm commitments have already been received in some but not all cases. It is expected that the total level finally received will be approximately as shown.

h_/ Does not include contributions from the UN organizations. See Table 1.

ATTACHMENT TO TABLES 1 – 4

TOTAL RESOURCES FOR IMPLEMENTATION IN 1995

	Programme / Major Programme	Regular Budget estimates	Funds from other UN organizations a_/	Other extra-budgetary resources	TACF b_/	Total
1.	**NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT**					
A.	Nuclear Power	5 011 000	–	137 000	2 520 000	7 668 000
B.	Nuclear Fuel Cycle	2 595 000	–	90 000	1 385 000	4 070 000
C.	Radioactive Waste Management	6 173 000	–	718 000	1 667 000	8 558 000
X.	Comparative Assessment of Nuclear Power and Other Energy Sources	2 016 000	–	292 000	430 000	2 738 000
	Major Programme 1	15 795 000	–	1 237 000	6 002 000	23 034 000
2.	**NUCLEAR APPLICATIONS**					
D.	Food and Agriculture	10 098 000	2 546 000	1 740 000	14 326 000	28 710 000
E.	Human Health	5 683 000	1 450 000	373 000	6 337 000	13 843 000
F.	Industry and Earth Sciences	3 400 000	–	–	8 875 000	12 275 000
G.	Physical and Chemical Sciences	8 312 000	374 000	15 718 000	10 716 000	35 120 000
	Major Programme 2	27 493 000	4 370 000	17 831 000	40 254 000	89 948 000
3.	**NUCLEAR SAFETY AND RADIATION PROTECTION**					
H.	Radiation Safety	4 400 000	–	3 049 000	9 110 000	16 559 000
I.	Safety of Nuclear Installations	6 693 000	–	3 234 000	5 100 000	15 027 000
	Major Programme 3	11 093 000	–	6 283 000	14 210 000	31 586 000
4.	**SAFEGUARDS**					
J.1.	Safeguards Operations	56 033 000	–	1 330 000	–	57 363 000
J.2.	Support and Development	14 104 000	–	3 270 000	–	17 374 000
J.3.	Safeguards Management:					
	Planning, Direction, Co-ordination and Control c_/	[323 000]	–	–	–	[323 000]
	Effectiveness Evaluation	998 000	–	–	–	998 000
	Programme and Resources	1 287 000	–	400 000	–	1 687 000
	Major Programme 4	72 422 000	–	5 000 000	–	77 422 000
S.	**DIRECTION AND SUPPORT**					
S.1.	General Management and Secretariat of the Policy-making Organs	11 933 000	3 663 000	–	–	15 596 000
S.2.	Administration	15 683 000	–	–	–	15 683 000
S.3.	Technical Co-operation Servicing and Co-ordination	11 795 000	–	380 000	7 866 000 d_/	20 041 000
S.4.	General Services	22 184 000	–	–	–	22 184 000
S.5.	Specialized Service Activities	7 937 000	–	540 000	161 000	8 638 000
S.6.	Support Services e_/	9 182 000	–	–	–	9 182 000
	Major Programme S	78 714 000	3 663 000	920 000	8 027 000	91 324 000
	Agency's Programmes	205 517 000	8 033 000	31 271 000	68 493 000	313 314 000
	Plus: Reimbursable Work for Others	6 040 000	–	–	–	6 040 000
	Total Budget	211 557 000	8 033 000	31 271 000	68 493 000	319 354 000
	SOURCE OF FUNDS:					
	Assessment on Member States	202 703 000	–	–	–	202 703 000
	Income from reimbursable work for others	6 040 000	–	–	–	6 040 000
	Other miscellaneous income	2 814 000	–	–	–	2 814 000
	Other UN organizations	–	8 033 000	–	1 000 000 f_/	9 033 000
	Technical Assistance and Co-operation Fund and Footnote a_/ projects for which financing has not been identified	–	–	–	63 085 000	63 085 000
	Extrabudgetary Programme	–	–	31 271 000	4 408 000 g_/	35 679 000
	Total Budget	211 557 000	8 033 000	31 271 000	68 493 000	319 354 000

a_/ Funds from FAO, UNEP, UNESCO, UN etc., but excluding UNDP – (see f_/).
b_/ Includes UNDP and footnote a_/ amounts and represents funds foreseen for implementation in 1995.
c_/ Included in S.1. – General Management and Secretariat of the Policy-making Organs.
d_/ Consists mainly of $ 5 375 000 in respect of manpower development (fellowships) which has not been allocated to individual programmes, the Reserve Fund of $ 1 150 000 and miscellaneous expenditure of $ 730 000.
e_/ Includes only the Library, DP Central Services and Publishing Services, all other services having been allocated to the user programmes.
f_/ UNDP only.
g_/ The $ 4 408 000 shown in Table 4 as expected from donors will be used to finance footnote a_/ projects.

TOTAL RESOURCES FOR IMPLEMENTATION IN 1996

	Programme / Major Programme	Regular Budget estimates	Funds from other UN organizations	Other extra-budgetary resources a/	TACF b/	Total
1.	**NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT**					
A.	Nuclear Power	5 256 000	–	96 000	2 520 000	7 872 000
B.	Nuclear Fuel Cycle	2 641 000	–	90 000	1 215 000	3 946 000
C.	Radioactive Waste Management	6 506 000	–	526 000	1 667 000	8 699 000
X.	Comparative Assessment of Nuclear Power and Other Energy Sources	2 118 000	–	292 000	630 000	3 040 000
	Major Programme 1	16 521 000	–	1 004 000	6 032 000	23 557 000
2.	**NUCLEAR APPLICATIONS**					
D.	Food and Agriculture	10 576 000	2 646 000	1 680 000	14 326 000	29 228 000
E.	Human Health	5 882 000	1 500 000	348 000	6 337 000	14 067 000
F.	Industry and Earth Sciences	3 562 000	–	–	8 875 000	12 437 000
G.	Physical and Chemical Sciences	8 608 000	374 000	12 569 000	10 716 000	32 267 000
	Major Programme 2	28 628 000	4 520 000	14 597 000	40 254 000	87 999 000
3.	**NUCLEAR SAFETY AND RADIATION PROTECTION**					
H.	Radiation Safety	4 556 000	–	3 145 000	9 520 000	17 221 000
I.	Safety of Nuclear Installations	7 041 000	–	1 884 000	6 285 000	15 210 000
	Major Programme 3	11 597 000	–	5 029 000	15 805 000	32 431 000
4.	**SAFEGUARDS**					
J.1.	Safeguards Operations	58 761 000	–	1 330 000	–	60 091 000
J.2.	Support and Development	14 305 000	–	3 270 000	–	17 575 000
J.3.	Safeguards Management:					
	Planning, Direction, Co-ordination and Control c/	[338 000]	–	–	–	[338 000]
	Departmental Services	1 040 000	–	–	–	1 040 000
		1 342 000	–	400 000	–	1 742 000
	Major Programme 4	75 448 000	–	5 000 000	–	80 448 000
S.	**DIRECTION AND SUPPORT**					
S.1.	General Management and Secretariat of the Policy-making Organs	12 432 000	3 663 000	–	–	16 095 000
S.2.	Administration	16 361 000	–	–	–	16 361 000
S.3.	Technical Co-operation Servicing and Co-ordination	12 380 000	–	246 000	7 866 000 d/	20 492 000
S.4.	General Services	23 105 000	–	–	–	23 105 000
S.5.	Specialized Service Activities	8 123 000	–	540 000	161 000	8 824 000
S.6.	Support Services e/	9 495 000	–	–	–	9 495 000
	Major Programme S	81 896 000	3 663 000	786 000	8 027 000	94 372 000
	Agency's Programmes	214 090 000	8 183 000	26 416 000	70 118 000	318 807 000
	Plus: Reimbursable Work for Others	6 298 000	–	–	–	6 298 000
	Total Budget	220 388 000	8 183 000	26 416 000	70 118 000	325 105 000
	SOURCE OF FUNDS:					
	Assessment on Member States	211 256 000	–	–	–	211 256 000
	Income from reimbursable work for others	6 298 000	–	–	–	6 298 000
	Other miscellaneous income	2 834 000	–	–	–	2 834 000
	Other UN organizations	–	8 183 000	–	1 000 000 f/	9 183 000
	Technical Assistance and Co-operation Fund and Footnote a/ projects for which financing has not been identified	–	–	–	64 800 000	64 800 000
	Extrabudgetary Programme	–	–	26 416 000	4 318 000 g/	30 734 000
	Total Budget	220 388 000	8 183 000	26 416 000	70 118 000	325 105 000

a/ Funds from FAO, UNEP, UNESCO, UN etc., but excluding UNDP – (see f/).
b/ Includes UNDP and footnote a/ amounts and represents funds foreseen for implementation in 1996.
c/ Included in S.1. – General Management and Secretariat of the Policy-making Organs.
d/ Consists mainly of $ 5 375 000 in respect of manpower development (fellowships) which has not been allocated to individual programmes, the Reserve Fund of $ 1 150 000 and miscellaneous expenditure of $ 730 000.
e/ Includes only the Library, DP Central Services and Publishing Services, all other services having been allocated to the user programmes.
f/ UNDP only.
g/ The $ 4 318 000 shown in Table 4 as expected from donors will be used to finance footnote a/ projects.

MAJOR PROGRAMME 1

NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT

MAJOR PROGRAMME 1

NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT

Summary of total resources by programme

Table 5

	Programme / Major Programme	1995 Staffing P	1995 Staffing GS	1995 Regular Budget estimates	1995 Funds from other UN organizations	1995 Other extra-budgetary resources	1995 TACF a_/	1996 Regular Budget estimates	1996 Funds from other UN organizations	1996 Other extra-budgetary resources	1996 TACF a_/
A.	Nuclear Power	19.8	12.1	5 011 000	–	137 000	2 520 000	5 256 000	–	96 000	2 520 000
	Additional high-priority activities	–	–	116 000	–	–	–	120 000	–	–	–
B.	Nuclear Fuel Cycle	10.5	6.0	2 595 000	–	90 000	1 385 000	2 641 000	–	90 000	1 215 000
C.	Radioactive Waste Management	23.6	22.2	6 173 000	–	718 000	1 667 000	6 506 000	–	526 000	1 667 000
	Additional high-priority activities	–	–	618 000	–	–	–	101 000	–	–	–
X.	Comparative Assessment of Nuclear Power and Other Energy Sources	5.8	3.2	2 016 000	–	292 000	430 000	2 118 000	–	292 000	630 000
	Major Programme 1	59.7	43.5	15 795 000	–	1 237 000	6 002 000	16 521 000	–	1 004 000	6 032 000
	Additional high-priority activities	–	–	734 000	–	–	–	221 000	–	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative.

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME A: NUCLEAR POWER

A/1. The aim of this programme is to provide support to those Member States which have already implemented, or are considering implementing, a nuclear power programme. By collecting and distributing to Member States the best available information on results from research and development programmes and on the best current practices in planning, design, construction, project management, operation and maintenance, this programme promotes and supports efforts to improve the reliability, economics and safety of current and future nuclear power plants and contributes to the development of expertise in developing countries. There are three major groups of beneficiaries.

A/2. The first group is made up of the organizations which have the responsibility of planning and implementing national power programmes of which nuclear power could form one component. In particular, for countries which are considering the introduction of nuclear power, emphasis will be placed on supporting their planning activities, if requested, for timely and sound decisions on the mix of primary energy sources for electricity generation, taking into account all national factors, including the environment.

A/3. The second group are the owners and operators of nuclear power plants, along with relevant government departments and the infrastructural organizations whose function is to provide support for the efficient and safe performance of nuclear power and to develop the necessary qualified manpower resources.

A/4. The third group of beneficiaries comprises those institutions that are charged with the deployment or development of future advanced reactors for electricity generation or direct heat utilization, either through evolutionary improvements of currently operating plants, or through innovative approaches.

A/5. A significant part of the programme involves contributions to the effective implementation of TC projects and training courses in the area of nuclear power. The resources required for this support are not expected to be significantly different from present levels.

A/6. The Agency's programme covers the following main areas: nuclear power planning and implementation; nuclear power plant performance; and advanced nuclear power reactor development and applications. Nuclear fusion is also included within this programme.

PROGRAMME A: NUCLEAR POWER
Summary of Regular Budget estimates by subprogramme
Table 6

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
A.1	Nuclear Power Planning and Implementation	NENP	973 000	258 000	26.5	1 231 000	(29 000)	(2.4)	1 202 000	5.6	1 300 000	4.2	1 324 000
A.2	Assessment and Improvement of Nuclear Power Plant Performance	NENP	1 598 000	(169 000)	(10.6)	1 429 000	69 000	4.8	1 498 000	5.3	1 505 000	4.1	1 640 000
A.3	Advanced Reactor Developments and Applications (Combination of old A.3 and A.4)	NENP	1 507 000	(3 000)	(0.2)	1 504 000	–	–	1 504 000	5.1	1 581 000	4.0	1 644 000
A.4	Nuclear Fusion (Old A.5)	NENP	79 000	(4 000)	(5.1)	75 000	–	–	75 000	5.3	79 000	3.8	82 000
	a_/	ADPU	[475 000]	(42 000)	(8.8)	[433 000]	–	–	[433 000]	[5.3]	[456 000]	[4.4]	[476 000]
		RIPC	524 000	(5 000)	(1.0)	519 000	–	–	519 000	5.2	546 000	3.9	566 000
	Additional high-priority activities		–	110 000	–	110 000	–	–	110 000	5.5	116 000	3.5	120 000
Programme A – Nuclear Power			4 681 000	77 000	1.6	4 758 000	40 000	0.8	4 798 000	5.3	5 011 000	4.0	5 256 000
Additional high-priority activities			–	110 000	–	110 000	–	–	110 000	5.5	116 000	3.5	120 000

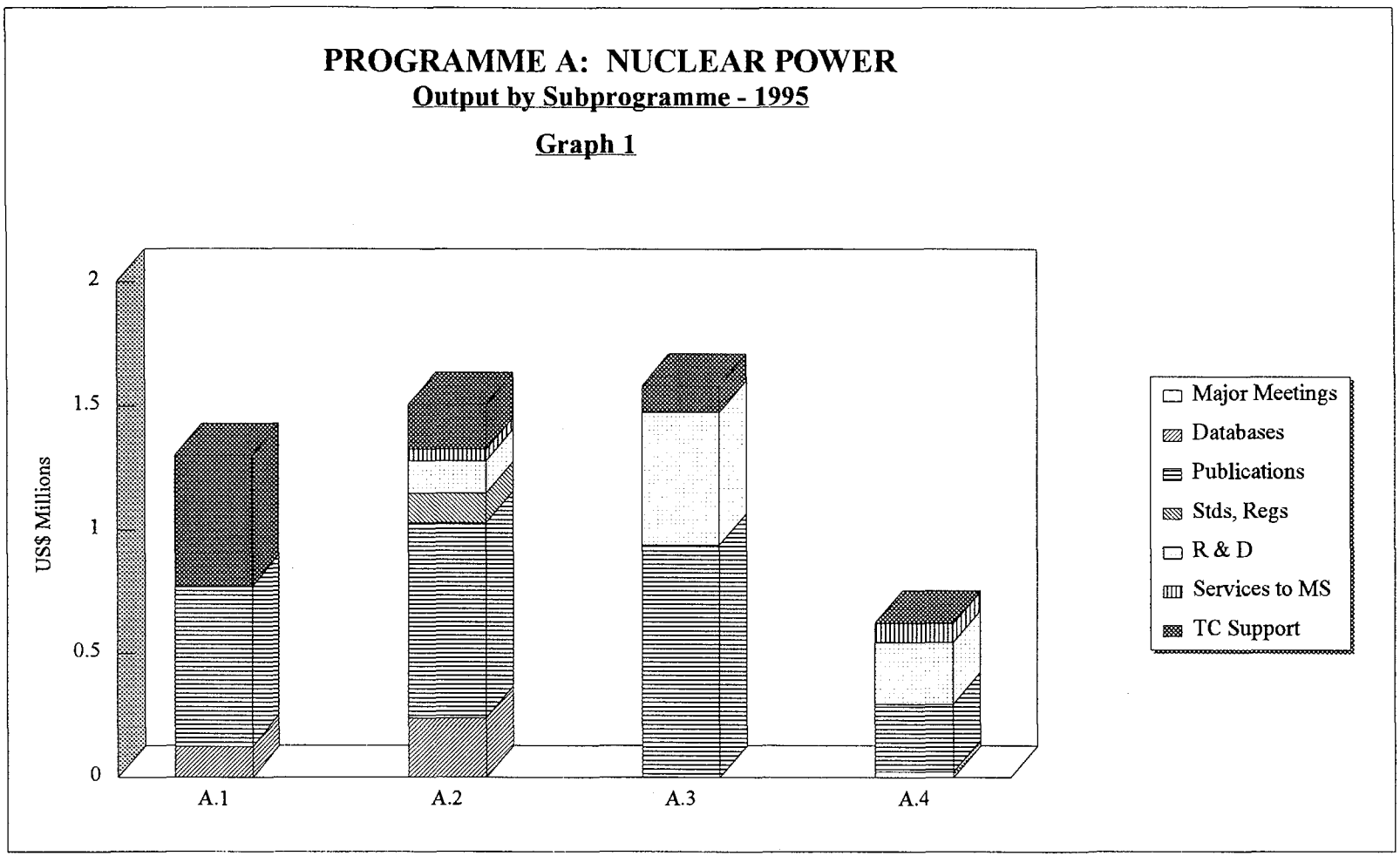
a_/ The Nuclear Fusion Journal is funded by income from sales and page charges. The cost is shown for information only.

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME A: NUCLEAR POWER

Output by Subprogramme - 1995

Graph 1



PROGRAMME A: NUCLEAR POWER
Summary of Regular Budget Estimates by Project
Table 7

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
A.1.	Nuclear Power Planning and Implementation													
A.1.01	Development of Guidlines and Softwares for an Integrated Approach to Energy, Electricity and Nuclear Power Programme Planning	1996	NENP	183 000	(63 000)	(34.4)	120 000	–	–	120 000	5.6	127 000	4.2	132 000
A.1.02	Assistance in Nuclear Power Programme Planning	Cont.	NENP	413 000	(85 000)	(20.6)	328 000	–	–	328 000	5.6	346 000	4.2	361 000
A.1.03	Nuclear Power Programme Implementation	Cont.	NENP	206 000	420 000	203.9	626 000	(29 000)	(4.6)	597 000	5.6	661 000	4.2	658 000
A.1.GA	General Activities	Cont.	NENP	171 000	(14 000)	(8.2)	157 000	–	–	157 000	5.6	166 000	4.2	173 000
	Sub–total A.1.			973 000	258 000	26.5	1 231 000	(29 000)	(2.4)	1 202 000	5.6	1 300 000	4.2	1 324 000
A.2.	Assessment and Improvement of Nuclear Power Plant Performance													
A.2.01	Nuclear Power Plant Performance Assessment and Feedback	Cont.	NENP	507 000	(57 000)	(11.2)	450 000	9 000	2.0	459 000	5.3	475 000	4.1	503 000
A.2.02	Nuclear Power Plant Life Management	Cont.	NENP	337 000	29 000	8.6	366 000	14 000	3.8	380 000	5.3	385 000	4.1	416 000
A.2.03	Effective Quality Management of Nuclear Power Plants	Cont.	NENP	383 000	(119 000)	(31.1)	264 000	11 000	4.2	275 000	5.3	278 000	4.1	301 000
A.2.04	Man–machine Interface (Control and Instrumentation)	Cont.	NENP	371 000	(22 000)	(5.9)	349 000	35 000	10.0	384 000	5.3	367 000	4.1	420 000
	Sub – total A.2.			1 598 000	(169 000)	(10.6)	1 429 000	69 000	4.8	1 498 000	5.3	1 505 000	4.1	1 640 000

PROGRAMME A: NUCLEAR POWER
Summary of Regular Budget Estimates by Project
Table 7 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
A.3.	Advanced Reactor Developments and Applications													
A.3.01	Review of General Developments	Cont.	NENP	298 000	(6 000)	(2.0)	292 000	–	–	292 000	5.1	307 000	4.0	319 000
A.3.02	Water–cooled Reactors	Cont.	NENP	424 000	(8 000)	(1.9)	416 000	–	–	416 000	5.1	437 000	4.0	455 000
A.3.03	Liquid Metal–cooled Reactors	Cont.	NENP	254 000	(1 000)	(0.4)	253 000	–	–	253 000	5.1	266 000	4.0	277 000
A.3.04	Gas–cooled Reactors	Cont.	NENP	168 000	21 000	12.5	189 000	–	–	189 000	5.1	199 000	4.0	207 000
A.3.05	Co–generation and Heat Applications (Old A.4.01)	Cont.	NENP	257 000	(9 000)	(3.5)	248 000	–	–	248 000	5.1	261 000	4.0	270 000
A.3.06	Transmutation of Actinides (Old A.4.02)	Cont.	NENP	106 000	–	–	106 000	–	–	106 000	5.1	111 000	4.0	116 000
	Sub–total A.3.			1 507 000	(3 000)	(0.2)	1 504 000	–	–	1 504 000	5.1	1 581 000	4.0	1 644 000
A.4.	Nuclear Fusion													
A.4.01	Fusion Research and Engineering (Old A.5.01)	Cont.	NENP	79 000	(4 000)	(5.1)	75 000	–	–	75 000	5.3	79 000	3.8	82 000
		Cont.	RIPC	438 000	(4 000)	(0.9)	434 000	–	–	434 000	5.3	457 000	3.7	473 000
	Additional high–priority activities			–	110 000	–	110 000	–	–	110 000	5.3	116 000	3.7	120 000
A.4.02	International Thermonuclear Experimental Reactor (ITER) (Old A.5.02)	1998	RIPC	86 000	(1 000)	(1.2)	85 000	–	–	85 000	4.7	89 000	4.5	93 000
A.4.03	Nuclear Fusion Journal a_/ (Old A.5.03)	Cont.	ADPU	[475 000]	(42 000)	(8.8)	[433 000]	–	–	[433 000]	[5.3]	[456 000]	[4.4]	[476 000]
	Sub – total A.4.			603 000	(9 000)	(1.5)	594 000	–	–	594 000	5.2	625 000	3.9	648 000
	Additional high–priority activities			–	110 000	–	110 000	–	–	110 000	5.5	116 000	3.5	120 000
Programme A – Nuclear Power				4 681 000	77 000	1.6	4 758 000	40 000	0.8	4 798 000	5.3	5 011 000	4.0	5 256 000
	Additional high–priority activities			–	110 000	–	110 000	–	–	110 000	5.5	116 000	3.5	120 000

a_/ The Nuclear Fusion Journal is funded by income from sales and page charges. The cost is shown for information only.

PROGRAMME A: NUCLEAR POWER
List of projects and estimated total resources for 1995 and 1996
Table 8

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a_/
A.1.	Nuclear Power Planning and Implementation										
A.1.01	Development of Guidlines and Softwares for an Integrated Approach to Energy, Electricity and Nuclear Power Programme Planning	1996	NENP	0.5	0.3	127 000	–	–	132 000	–	–
A.1.02	Assistance in Nuclear Power Programme Planning	Cont.	NENP	2.2	1.1	346 000	–	380 000	361 000	–	380 000
A.1.03	Nuclear Power Programme Implementation	Cont.	NENP	3.2	1.0	661 000	32 000	810 000	658 000	–	810 000
A.1.GA	General Activities	Cont.	NENP	0.9	0.6	166 000	–	–	173 000	–	–
	Sub-total A.1.			6.8	3.0	1 300 000	32 000	1 190 000	1 324 000	–	1 190 000
A.2.	Assessment and Improvement of Nuclear Power Plant Performance										
A.2.01	Nuclear Power Plant Performance Assessment and Feedback	Cont.	NENP	1.5	2.4	475 000	–	150 000	503 000	–	180 000
A.2.02	Nuclear Power Plant Life Management	Cont.	NENP	1.9	1.2	385 000	–	160 000	416 000	–	190 000
A.2.03	Effective Quality Management of Nuclear Power Plants	Cont.	NENP	1.3	0.8	278 000	–	335 000	301 000	–	310 000
A.2.04	Man-machine Interface (Control and Instrumentation)	Cont.	NENP	1.5	0.4	367 000	16 000	345 000	420 000	16 000	310 000
	Sub – total A.2.			6.2	4.8	1 505 000	16 000	990 000	1 640 000	16 000	990 000
A.3.	Advanced Reactor Developments and Applications										
A.3.01	Review of General Developments	Cont.	NENP	0.9	0.5	307 000	25 000	100 000	319 000	25 000	100 000
A.3.02	Water-cooled Reactors	Cont.	NENP	1.3	1.0	437 000	–	40 000	455 000	–	40 000
A.3.03	Liquid Metal-cooled Reactors	Cont.	NENP	1.2	0.8	266 000	–	–	277 000	–	–
A.3.04	Gas-cooled Reactors	Cont.	NENP	0.7	0.3	199 000	–	–	207 000	–	–
A.3.05	Co-generation and Heat Applications (Old A.4.01)	Cont.	NENP	0.5	0.4	261 000	64 000	200 000	270 000	55 000	200 000
A.3.06	Transmutation of Actinides (Old A.4.02)	Cont.	NENP	0.4	0.3	111 000	–	–	116 000	–	–
	Sub-total A.3.			5.0	3.3	1 581 000	89 000	340 000	1 644 000	80 000	340 000
A.4.	Nuclear Fusion										
A.4 01	Fusion Research and Engineering (Old A.5.01)	Cont.	NENP	0.2	0.1	79 000	–	–	82 000	–	–
		Cont.	RIPC	1.6	0.9	457 000	–	–	473 000	–	–
	Additional high-priority activities			–	–	116 000	–	–	120 000	–	–
A.4.02	International Thermonuclear Experimental Reactor (ITER) (Old A.5.02)	1998	RIPC	–	–	89 000	–	–	93 000	–	–
A.4.03	Nuclear Fusion Journal b_/ (Old A.5.03)	Cont.	ADPU	–	–	[456 000]	–	–	[476 000]	–	–
	Sub – total A.4.			1.8	1.0	625 000	–	–	648 000	–	–
	Additional high-priority activities			–	–	116 000	–	–	120 000	–	–
Programme A – Nuclear Power				19.8	12.1	5 011 000	137 000	2 520 000	5 256 000	96 000	2 520 000
	Additional high-priority activities			–	–	116 000	–	–	120 000	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
b_/ The Nuclear Fusion Journal is funded by income from sales and page charges. The cost is shown for information only.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme A.1

Nuclear Power Planning and Implementation

Main Accomplishments (1991-94)

A/7. The main issues relating to the financing of nuclear projects, particularly in developing countries, were reviewed and a reference book published in 1993 (Technical Reports Series No. 353). An executive summary of this document (in four languages) was also issued.

A/8. The Energy and Economic Data Bank (EEDB) continued to be updated with the most recent information available. In addition, the development of a LAN based personal computer version (Micro-EEDB) will be completed in 1994 in order to provide faster and easier access. EEDB continued to be used to respond to internal and external queries and to provide summary data for Agency publications.

A/9. The computer models for energy, electricity and nuclear power planning (MAED, WASP, VALORAGUA, ENPEP) developed by the Agency continued to be maintained and enhanced. A new version of the WASP model (WASP-III Plus) was completed in 1993. A further improved version of this program (WASP-IV), developed in co-operation with the Hungarian Power Companies and the Public Power Corporation of Greece, is scheduled for completion by the end of 1994. Improved versions of the ENPEP package were completed in collaboration with the Argonne National Laboratory (USA) and the User's Manual for this package was published in the Computer Manual Series. The computer model VALORAGUA was completed in co-operation with Electricidade de Portugal (EDP), the World Bank (IBRD) and consultants from the Union of Yugoslavia Electric Power Industry (JUGEL), and user's manuals were published. A technical document on the accumulated experience and lessons learned was published. A regional (Europe, Middle East and North Africa) workshop on experience with the use of Agency's models will be held in 1994, and the proceedings published as an IAEA-TECDOC.

A/10. Several international organizations (e.g. the World Bank, the Asian Development Bank, the Inter-American Development Bank, CEC, OLADE) are using the Agency's planning models. Co-operation with some of these organizations was maintained and further strengthened through the application of the ENPEP package in CEC regional studies and the use of parts of ENPEP within the SUPER/OLADE-BID computer package for electricity expansion planning adapted to the particular needs of the OLADE countries, developed with support from the Inter-American Development Bank.

A/11. Work continued on the development and implementation of an integrated approach to energy, electricity and nuclear power planning for developing Member States. A technical document on this approach will be published in 1994. Nuclear power planning advisory missions were undertaken to assist developing countries in assessing their level of preparedness to undertake a nuclear power programme, and to make recommendations on further preparatory steps to be considered under the TC programme.

A/12. A technical document on good construction practices has been completed. This is intended to help both designers and constructors of nuclear power plants to achieve shorter construction schedules, improved quality and better economic results.

A/13. Through the TC programme, training courses and workshops covering the introduction of nuclear power and pre-project implementation were organized on an interregional, regional or national basis. More than 40 TC projects have been serviced in some 20 developing Member States. In those countries that are considering the nuclear option, technical assistance has been directed toward improving capabilities for carrying out nuclear power programme planning and performing feasibility studies, providing systematic guidance on training facilities, establishing an organizational infrastructure and strengthening the industrial capabilities for supporting a nuclear power programme. In countries with an on-going programme, capabilities have been transferred in such areas as bid invitation and evaluation, project management, construction work surveillance programmes, training of operating personnel, development of qualification criteria, operation management, plant outage planning and maintenance organization, in-service inspection, quality assurance and upgrading of plant instrumentation and control systems.

Main Activities Planned for 1995-96

A/14. There will be a significant increase in the resources available, associated entirely with the area of nuclear power programme implementation (the other areas show decreases in the budgeted amounts). Projects A.1.03 has reverted to a larger scope, as it was several years ago, covering nuclear power programme implementation. In 1993-94 this project included only feedback of experience in construction and previous coverage of manpower development had been dropped. In the light of current emphasis on the need for improved and systematic training and qualification of operating and maintenance staff and as a result of a review by the Agency in which Member States, WANO and the CEC participated, this aspect of the programme has been reinstated. It is possible to undertake the enlarged scope of this project through a rearrangement of staff assignments and budget within subprogrammes A.1 and A.2. The number of TC projects will remain at about the same level. A small amount of extrabudgetary funds are expected to be available in 1995.

A/15. A number of Member States maintain an active nuclear power programme and others, for example in South East Asia, are showing new interest. In response to their needs, more emphasis will be devoted to enhancing local capabilities by supplying improved computer tools, conducting training and preparing technical documents in order to support sound and comprehensive nuclear power programme planning, improve manpower qualifications and strengthen infrastructures for national participation in a nuclear power programme. The integrated approach to nuclear power programme planning will be further improved in the light of lessons learned from previous implementation.

A/16. In the field of nuclear power planning, the aim is to strengthen national institutions and organizations responsible for medium and long term nuclear power programme planning, feasibility studies and bid invitation and evaluation. The results to be expected include: transfer of the latest versions of the Agency's planning models together with training on their effective use; promotion of a better awareness, on the part of the planners and decision makers, of the most important factors in preparing for decisions about introducing or expanding nuclear power programmes; and strengthening national capabilities for making feasibility studies and conducting the bidding invitation and evaluation process.

A/17. In the area of nuclear power implementation, the objective is to promote a higher degree of national self-sufficiency in developing Member States by the systematic development and improvement of a wide range of infrastructural facilities, including organizational structures and management. Improved systems and tools for training and manpower development will be produced. Experience from construction and operation will be documented and used to facilitate backfitting and changes in design. It is intended to provide, on the one hand, analysis and documentation of construction and operating experience in order to promote feedback to design and engineering work and, on the other hand, guidelines on establishing training facilities, assessment of training programmes, the definition of criteria for qualification of personnel and the setting up of appropriate measures for maintaining competence. The results to be expected include a better awareness in all countries of good practices in plant construction along with increased proficiency of operating staff.

Subprogramme A.2

Assessment and Improvement of Nuclear Power Plant Performance

Main Accomplishments (1991-94)

A/18. In the field of nuclear power plant performance, the Agency has organized a broad and systematic exchange of information on the status and operating experience of nuclear power plants worldwide with the aim of promoting improvements in their safe, reliable and economical performance. By the end of 1993, the computerized Power Reactor Information System (PRIS) contained information on basic performance parameters from about 6500 reactor-years of operating experience and a short description of more than 40 000 full and partial plant outages (planned and unplanned). The personal computer version of PRIS, known as MICROPRIS, has been made available to more than 160 users in 51 Member States and 8 international organizations. The redesign and migration of PRIS to the LAN environment will be completed early in 1994, providing improved flexibility of data entry and a user friendly interface for database maintenance. The contents of PRIS have been improved to provide more detailed information on reactor design characteristics. Co-operation with the World Energy Council (WEC) and UNIPEDE has continued in studies related to the availability of power plants and to the harmonization of terminology and definitions.

A/19. In the area of nuclear power plant life management, the Agency has developed guidance on a database on reactor pressure vessel surveillance data, on ageing phenomena and on methodologies for monitoring degradation mechanisms. Specialists meetings were held on irradiation embrittlement and annealing and steam generator problems and replacement. A CRP on reactor pressure vessel surveillance was completed and a new one on the ageing of reactor pressure vessel primary nozzles was started. A revised and updated Technical Report on neutron irradiation effects on reactor pressure vessel steels and weldments was prepared for publication.

A/20. In the field of quality management the following activities have been accomplished:

- A technical document providing guidance for improving the quality of performance in nuclear installations was published.

- A complete set of revised NUSS quality assurance (QA) Code and Safety Guides was produced and submitted for Member State comments.
- A new Safety Guide on QA for decommissioning was produced and submitted to Member States for comments.
- Five review missions in the area of QA were carried out in three Member States (Czech Republic, Hungary and Slovakia).
- An interregional training course was organized in Argentina on QA in nuclear power plant operation and maintenance.
- Technical support for 8 TC projects was provided.

A/21. The International Working Group on Nuclear Power Plant Instrumentation and Control met in 1993 to review the status of the relevant Agency programme. A final draft was produced of an IAEA-TECDOC on the use of computers in the design, operation and maintenance of nuclear power plants. Another document provides guidelines for control room design. The subjects covered by the specialists meeting were: operator support systems; improvements in nuclear instrumentation; experience in instrumentation and control — ageing effects and maintenance procedures. Work started on two new CRPs dealing with operator support systems and the ageing of motor operated valves. An interregional training course on control and instrumentation was organized and hosted by Germany. A joint IEC/IAEA project on instrumentation for the safe operation of water cooled, graphite moderated RBMK-type power reactors has started, aimed at problem identification and recommendations for improvements through modernization and enhancement of instrumentation and controls.

Main Activities Planned for 1995-96

A/22. This subprogramme has to be considered in connection with subprogramme I.3, which is aimed at improving the operational safety of nuclear power plants.

A/23. There will be a decrease in resources in this area (though funds for the nuclear power plant life management project are increased). The revision of the quality assurance NUSS Code and Safety Guides will have been completed and there is a reduction in this area. It is expected that the number of TC projects will remain essentially constant. A small amount of extrabudgetary funding is expected to finance two meetings on control and instrumentation for improved RBMK and WWER reactor safety.

A/24. An objective of this subprogramme is to provide information to help assess and improve plant performance. In this connection, the PRIS database will be maintained and updated while the quality of its services available to the users will be increased. It is also intended to document those operational activities that support improved plant performance by publishing technical reports which review utility experience in critical problem areas such as the organization of technical support to operation and maintenance activities, along with training of maintenance personnel. Liaison will be maintained with other international organizations such as WEC, UNIPEDE and WANO.

A/25. On the basis of recommendations of the International Working Group on Life Management of Nuclear Power Plants (IWG-LMNPP), work will be done on improving the long term reliable, economic and safe operation of nuclear power plants. Activities will consist mainly of providing a forum for specialists to share experience, updating the results of technological developments and disseminating information through technical documents.

Specialists meetings will be held on selected subjects in fracture mechanics, corrosion control of pressure retaining components and methods to detect incipient material degradation. The output will include publications on utility experience with major refurbishment and extraordinary maintenance operations, such as the replacement of steam generators, which are becoming an increasing concern of the nuclear industry. Also, experience with and problems in the ageing of concrete structures in nuclear power plants will be documented, and the results assessed and made available. A CRP on the management of the ageing of reactor pressure vessel primary nozzles will be completed in 1996. Work will be done on the development and dissemination of databases on ageing problems with selected power plant components.

A/26. A third objective in this subprogramme is the promotion of overall plant safety, reliability and economic performance through successful management practices. The criteria for consistent and comprehensive quality management have already been defined and documented and so activities in 1995-96 will be reduced and re-oriented towards practical applications of the results obtained. This will be achieved through publications describing procedures and practices to ensure that the work quality and performance of contractors conform to utility requirements. These publications will be complemented by reports on practices that have proved successful in facilitating the utility-regulatory interface. Practical assistance, directed primarily at senior and middle level management in nuclear utilities and regulatory bodies, will be developed to help facilitate recognition of and to provide model practices for priority management issues. The new NUSS quality assurance documents will be completed. Assistance to Member States in reviewing and implementing effective quality management and quality assurance programmes will be continued. The need for the application of quality assurance programmes to regulatory organizations will be analysed.

A/27. The fourth objective will be to support the safe and reliable operation of nuclear power plants through activities relating to the man-machine interface and intended to reduce human errors by providing systematic guidance and an exchange of experience. Technical documents will be developed on criteria for advanced control systems and methodologies for assessing major upgrades and backfitting programmes. Since nuclear power plant control and instrumentation technology is developing rapidly, a database will be established to collect and systematize relevant experience in this field. A CRP on operator support systems will continue. The published results from this work will permit analysis and documentation of good practices and set criteria for cost-benefit assessments. As a complement to the work described in para. I/88, a set of recommendations will be developed to implement upgrades of instrumentation and control systems in RBMK and WWER type power plants. A meeting of the International Working Group on Nuclear Power Plant Control and Instrumentation (IWG-NPPCI) will serve to exchange information on national programmes. The proceedings of a number of specialists meetings on selected topics will be published. A CRP on the ageing of motor operated isolation valves will be continued.

A/28. Systematic guidance will be prepared on issues such as: advanced control systems, the monitoring of post-accident situations, diagnosis systems and simulator training programmes. A database on existing operator support systems will be maintained to help analyse and document good practices.

Subprogramme A.3

Advanced Reactor Developments and Applications

Main Accomplishments (1991-94)

A/29. Work in the area of advanced reactors has concentrated on information exchange and the documentation of advanced reactor developments in Member States. A major event was an international symposium on Advanced Nuclear Power Systems: Design, Technology, Safety and Strategies for their Deployment held in October 1993 in Seoul, Republic of Korea. The symposium focused on barriers to nuclear power deployment and strategies to overcome these barriers. Specific plant design objectives and safety principles for advanced reactors were discussed as well as the views of regulatory bodies on these objectives and principles. The need for international co-operation for overcoming the barriers and the possible roles of international organizations were addressed.

A/30. The International Working Group on Advanced Technologies for Water Cooled Reactors (IWG-ATWR), which has representation from 18 Member States, reviewed on a regular basis the status and progress and related national development programmes. Technical documents on materials for advanced water cooled reactors and on the development and design aspects have been published. Reports on the status of advanced containment systems for next-generation water cooled reactors and on factors affecting electric power generation costs have been prepared and published. Information exchange meetings have been convened on the thermohydraulics of cooling systems in advanced water cooled reactors and on advances in heavy water reactors. A CRP on the establishment of a thermophysical properties database for light and heavy water reactor materials has been established. An IAEA-TECDOC on safety principles for future nuclear power plants was drafted in response to a request of the General Conference in 1991. This publication is based on relevant international documents, such as that developed by INSAG, and also reflects the recent trend to consider the consequences of certain severe accident sequences already at the design stage in order to enhance still further the protection of the general public.

A/31. The experience gained from R&D programmes as well as the operation and construction of fast reactors has been reviewed periodically by the International Working Group on Fast Reactors (IWG-FR), consisting of representatives from 10 Member States. International co-operation on fast reactors has helped the attainment of a consensus on design principles and on the general features of fast reactors, although specific design and national projects are different. Published IWG reports and technical documents cover the following topics: national fast reactor development programmes; updating of plant parameters; passive self actuated backup shutdown system; technologies for seismic protection of the LMFR nuclear island; decay heat removal by natural convection; use of fast reactors for radwaste burning; application of acoustic signal processing for the detection of sodium boiling or sodium-water interaction and the fast reactor core with low (near zero) sodium void reactivity (benchmark co-operation with CEC).

A/32. Within the framework of the International Working Group on Gas Cooled Reactors (IWG-GCR), consisting of representatives from 11 Member States, co-ordinated research projects have been established in the area of reactor core physics, fuel and fission product

behaviour and passive decay heat removal. Specifically, an international project is under way at the PROTEUS critical experiment facility in Switzerland to obtain high quality reactor physics data to validate codes used for the design of advanced gas cooled reactor cores. Also, CRPs have been established to validate predictive methods for fuel and fission product behaviour and to confirm the ability of advanced designs to passively dissipate decay heat.

A/33. A status report consisting of a compilation of technical and economic information on small and medium sized reactors has been prepared. The report presents technical design data and information about the status in a consistent and systematic format. A review of integral reactor design concepts and passive systems is planned for 1994 and reports will be prepared for publication.

A/34. In September 1992 a report was published on comparative costs for seawater desalination using nuclear and fossil energy. The study was undertaken in response to a request made by the General Conference. The report concludes that the use of nuclear energy for seawater desalination is technically feasible and economically competitive for medium to large size units integrated into the electric grid system.

A/35. Until 1992, attention was given to the validation of computer codes for water cooled reactors and to the safe core management of WWERs using burnable absorbers. On the completion of these activities, attention was switched to monitoring developments regarding the transmutation of actinides in reactors and accelerator systems, and to the development of computer codes for performing core management calculations for various reactor types.

Main Activities Planned for 1995-96

A/36. This subprogramme combines the former A.3 and A.4 subprogrammes. (The activities deal in part with the implementation of safety principles for advanced reactors, whereas subprogramme I.6 deals with the development of these principles). Total regular budget resources are almost unchanged although there will be some increase for work on gas cooled reactors. A somewhat lower level of extrabudgetary funding is anticipated in 1995, mainly for studies of co-generation and heat applications. There is not expected to be any change in the number of TC projects.

A/37. The overall objective is to monitor and review the development of advanced reactors with enhanced safety features, improved reliability and better economics through the auspices of the International Working Groups on Advanced Technologies for Water Cooled Reactors, Fast Reactors and Gas Cooled Reactors. The main tools are CRPs, publications and meetings for the exchange of information.

A/38. The review of general developments will include: technical and economic aspects of innovative design features and the potential for the introduction of advanced systems, and technical approaches to facilitate safeguarding of future reactors through design. Particular attention will be paid to possible applications and unique features of small and medium power reactors (SMPRs). This activity will include an analysis of the SMPR market.

A/39. The steadily growing experience with operating water cooled reactors is leading to a greater consensus on design and safety objectives. This aim will be further promoted by disseminating information through technical documents on common trends in design features,

including achievements in national programmes on advanced water cooled reactors (AWCRs), recent results of experimental programmes and AWCR testing, advances in heavy water reactors and steam generators for AWCRs, and the compilation of a material properties database.

A/40. The CRP on validation of core seismic analysis codes will be completed in 1995 and the main findings published. Reviews will be made of advanced fast reactors and coolant technology and the results documented.

A/41. Activities in the area of gas cooled reactors will include: completion of the international project at the PROTEUS critical experiment facility to provide experimental data for validation of core physics computer codes for the design of advanced gas cooled reactors, continuation of CRPs on validation of predictive methods for fuel and fission product behaviour, heat transfer and afterheat removal under accident conditions and cost reduction strategies focusing on the development of highly efficient gas turbine cycles. Evaluation of process heat utilization systems for demonstration at the Japanese High Temperature Engineering Test Reactor (HTTR) will be carried out through international projects.

A/42. With regard to interest in the application of advanced reactors for non-electrical applications, the principal area of attention will be the review and dissemination of information on the potential of different types of advanced systems for the production of potable water and the generation of district and process heat. The activities will concentrate on desalination processes, site specific questions, infrastructure requirements and institutional issues. The activities on desalination are expected to be completed by 1998, unless extensions are specifically requested and funded by Member States.

A/43. The second area concerns the collection and exchange of information on systems (reactors and accelerators) which can be used for the transmutation of actinides, and on systems with reduced actinide generation. This would complement work carried out by OECD/NEA.

Subprogramme A.4

Nuclear Fusion

Main Accomplishments (1991-94)

A/44. International conferences in the field of plasma physics and controlled nuclear fusion research were organized in 1990, 1992 and 1994.

A/45. Between 1990 and 1993, around ten Technical Committee, Advisory Group and consultants meetings were organized each year on topical aspects of fusion power development.

A/46. Through the organization of two CRPs and through TC projects, assistance has been given to fusion laboratories in developing countries in the use of their research facilities with the aim of helping researchers to direct their work so that it contributes to the mainstream of fusion research.

A/47. The International Thermonuclear Experimental Reactor (ITER) Engineering Design Activities (EDA) were initiated under the auspices of the Agency in July 1992. The EDA is expected to run for six years.

Main Activities Planned for 1995-96

A/48. The resources available to this subprogramme remain essentially at the 1993-94 level. One cost-free expert will be available for the ITER support activities. The TC commitment is not expected to change. The Nuclear Fusion journal is produced at no cost to the programme.

A/49. The emphasis under the part of this subprogramme carried out by NENP will continue to be on the enhancement of international collaboration and the exchange of information on fusion engineering. Technical documents will be published on the integrated performance of first wall and blanket systems and on developments in fusion reactor safety.

A/50. Under the work carried out by RIPC, opportunities will be provided through meetings for interaction between research workers from developing Member States and from major fusion programmes and training in developing Member States will continue.

A/51. The Agency will continue to provide support services for the ITER EDA.

A/52. The Nuclear Fusion journal will continue to be produced by ADPU under a self-financing arrangement in which the work is funded by income from sales and from page charges levied on authors.

A/53. An additional high priority activity would relate to industrial applications of fusion and plasma physics technologies, pulse power and particle beams. The aim would be, by means of a CRP, to enhance collaboration between research laboratories and industry and to involve developing countries in this work. Two technical documents would be produced.

PROGRAMME B: NUCLEAR FUEL CYCLE

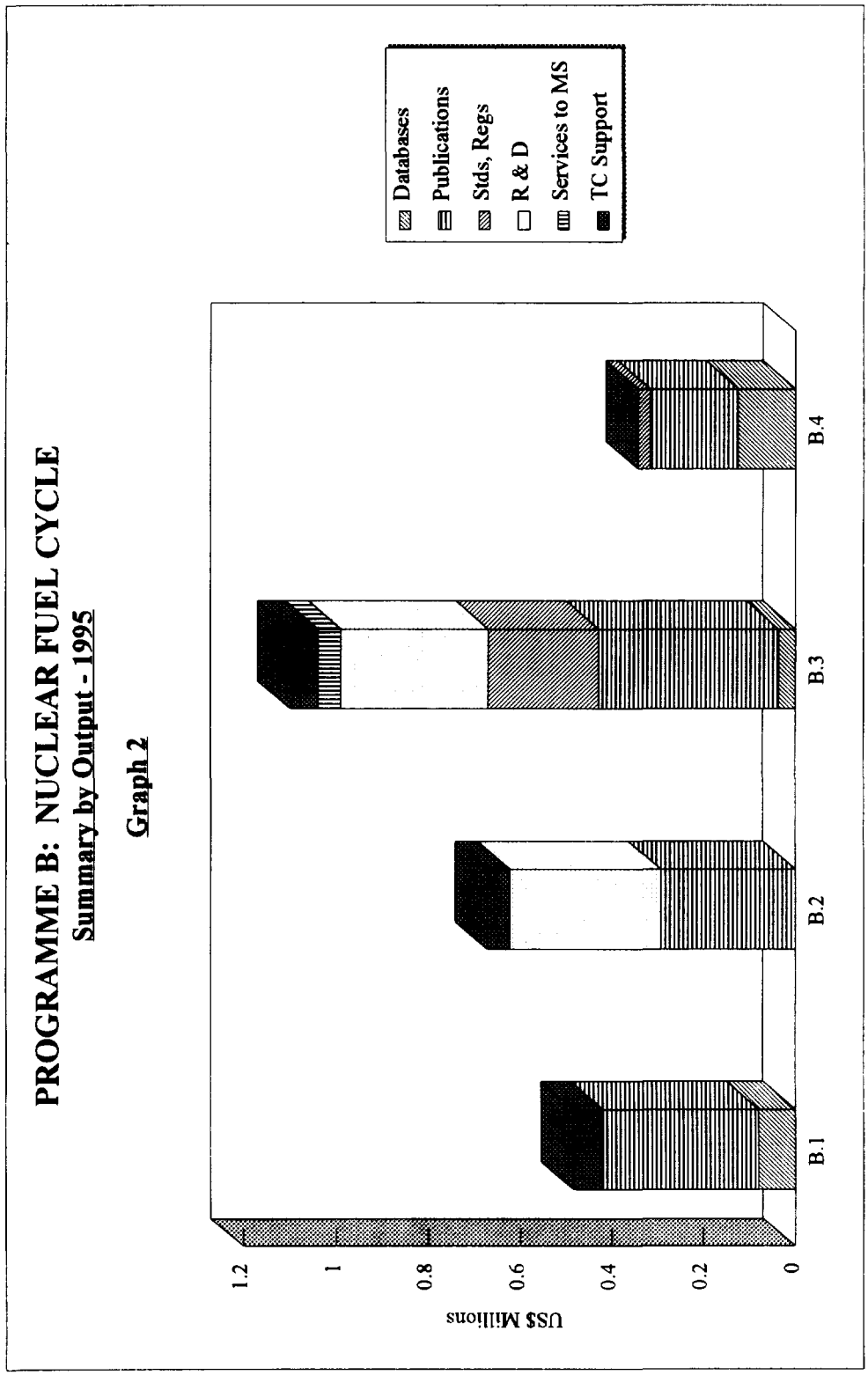
B/1. The long term goal of the programme is to help ensure the safety, reliability and economic viability of fuel cycle activities and to minimize their environmental and health impacts. This goal can be achieved by the exchange of experience through meetings, the development of norms, the compilation, analysis and dissemination of information and the provision of technical assistance to developing Member States.

B/2. Activities will centre on four areas: raw materials for reactor fuels; reactor fuel technology and performance; spent fuel management, technology and safety; nuclear fuel cycle information system and databases.

B/3. The following activities are regarded as being of special priority: spent fuel management; plutonium issues; the safety and reliability of water reactor fuels; and integration of information on uranium resources in Member States with emerging market economies into the worldwide picture.

PROGRAMME B: NUCLEAR FUEL CYCLE
Summary of Regular Budget estimates by subprogramme
Table 9

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
B.1	Raw Materials for Reactor Fuels	NENF	506 000	(48 000)	(9.5)	458 000	28 000	6.1	486 000	5.5	483 000	3.9	532 000
B.2	Reactor Fuel Technology and Performance	NENF	686 000	(46 000)	(6.7)	640 000	8 000	1.3	648 000	4.8	671 000	3.8	706 000
B.3	Spent Fuel Management, Technology and Safety	NENF	1 021 000	23 000	2.3	1 044 000	(85 000)	(8.1)	959 000	5.3	1 099 000	4.0	1 050 000
B.4	Information on the Nuclear Fuel Cycle	NENF	173 000	153 000	88.4	326 000	(2 000)	(0.6)	324 000	4.9	342 000	3.8	353 000
Programme B – Nuclear Fuel Cycle			2 386 000	82 000	3.4	2 468 000	(51 000)	(2.1)	2 417 000	5.1	2 595 000	3.9	2 641 000


PROGRAMME B: NUCLEAR FUEL CYCLE
Summary by Output - 1995
Graph 2
Databases
Publications
Stds, Regs
R & D
Services to MS
TC Support
US$ Millions
0
0.2
0.4
0.6
0.8
1
1.2
B.1
B.2
B.3
B.4

PROGRAMME B: NUCLEAR FUEL CYCLE
Summary of Regular Budget Estimates by Project
Table 10

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
B.1.	Raw Materials for Reactor Fuels													
B.1.01	Assessment of Uranium Resources and Projection of Supply and Demand	Cont.	NENF	133 000	63 000	47.4	196 000	18 000	9.2	214 000	5.5	207 000	3.9	234 000
B.1.02	Management of Uranium Exploration, Deposit Development, Production and Closure	1998	NENF	251 000	(59 000)	(23.5)	192 000	–	–	192 000	5.5	202 000	3.9	210 000
B.1.03	Preservation of Uranium Geology and Exploration Data and Maintenance of Databases	Cont.	NENF	122 000	(52 000)	(42.6)	70 000	10 000	14.3	80 000	5.5	74 000	3.9	88 000
	Sub – total B.1.			506 000	(48 000)	(9.5)	458 000	28 000	6.1	486 000	5.5	483 000	3.9	532 000
B.2.	Reactor Fuel Technology and Performance													
B.2.01	Reactor Fuel Materials	1998	NENF	196 000	20 000	10.2	216 000	(10 000)	(4.6)	206 000	4.8	226 000	3.8	225 000
B.2.02	Water Reactor Fuel Performance and Technology	Cont.	NENF	421 000	(56 000)	(13.3)	365 000	24 000	6.6	389 000	4.8	383 000	3.8	423 000
B.2.03	Advanced Fuel Technology and Performance	1998	NENF	69 000	(10 000)	(14.5)	59 000	(6 000)	(10.2)	53 000	4.8	62 000	3.8	58 000
	Sub – total B.2.			686 000	(46 000)	(6.7)	640 000	8 000	1.3	648 000	4.8	671 000	3.8	706 000

PROGRAMME B: NUCLEAR FUEL CYCLE
Summary of Regular Budget Estimates by Project
Table 10 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
B.3.	Spent Fuel Management, Technology and Safety													
B.3.01	Spent Nuclear Fuel Arisings, Storage Options and Practices	Cont.	NENF	468 000	(126 000)	(26.9)	342 000	(20 000)	(5.9)	322 000	5.3	360 000	4.0	353 000
B.3.02	Safety of Spent Fuel Storage	1997	NENF	254 000	23 000	9.1	277 000	(22 000)	(7.9)	255 000	5.3	292 000	4.0	279 000
B.3.03	Handling and Storage of Spent Fuel from Research and Test Reactors	1998	NENF	141 000	76 000	53.9	217 000	(9 000)	(4.2)	208 000	5.3	229 000	4.0	228 000
B.3.04	Technical Developments in the Back End of the Fuel Cycle	Cont.	NENF	158 000	50 000	31.7	208 000	(34 000)	(16.4)	174 000	5.3	218 000	4.0	190 000
	Sub – total B.3.			1 021 000	23 000	2.3	1 044 000	(85 000)	(8.1)	959 000	5.3	1 099 000	4.0	1 050 000
B.4.	Information on the Nuclear Fuel Cycle													
B.4.01	Nuclear Fuel Cycle Systems (New Project)	1997	NENF	–	109 000	–	109 000	(5 000)	(4.6)	104 000	4.9	114 000	3.8	113 000
B.4.02	Plutonium Accumulation and Emerging Problems (Old B.2.04)	Cont.	NENF	81 000	53 000	65.4	134 000	(6 000)	(4.5)	128 000	4.9	141 000	3.8	140 000
B.4.03	Nuclear Fuel Cycle Databases (Old B.4.01)	Cont.	NENF	92 000	(9 000)	(9.8)	83 000	9 000	10.8	92 000	4.9	87 000	3.8	100 000
	Sub – total B.4.			173 000	153 000	88.4	326 000	(2 000)	(0.6)	324 000	4.9	342 000	3.8	353 000
Programme B – Nuclear Fuel Cycle				2 386 000	82 000	3.4	2 468 000	(51 000)	(2.1)	2 417 000	5.1	2 595 000	3.9	2 641 000

PROGRAMME B: NUCLEAR FUEL CYCLE
List of projects and estimated total resources for 1995 and 1996
Table 11

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a_/
B.1.	Raw Materials for Reactor Fuels										
B.1.01	Assessment of Uranium Resources and Projection of Supply and Demand	Cont.	NENF	1.0	0.5	207 000	–	200 000	234 000	–	200 000
B.1.02	Management of Uranium Exploration, Deposit Development, Production and Closure	1998	NENF	1.0	0.5	202 000	–	550 000	210 000	–	520 000
B.1.03	Preservation of Uranium Geology and Exploration Data and Maintenance of Databases	Cont.	NENF	0.4	0.4	74 000	–	100 000	88 000	–	100 000
	Sub – total B.1.			2.4	1.4	483 000	–	850 000	532 000	–	820 000
B.2.	Reactor Fuel Technology and Performance										
B.2.01	Reactor Fuel Materials	1998	NENF	1.0	0.4	226 000	–	160 000	225 000	–	40 000
B.2.02	Water Reactor Fuel Performance and Technology	Cont.	NENF	1.3	0.7	383 000	–	60 000	423 000	–	60 000
B 2.03	Advanced Fuel Technology and Performance	1998	NENF	0.2	0.3	62 000	–	–	58 000	–	–
	Sub – total B.2.			2 5	1.4	671 000	–	220 000	706 000	–	100 000
B.3.	Spent Fuel Management, Technology and Safety										
B.3.01	Spent Nuclear Fuel Arisings, Storage Options and Practices	Cont.	NENF	1.3	0.8	360 000	–	265 000	353 000	–	165 000
B.3.02	Safety of Spent Fuel Storage	1997	NENF	1.0	0.7	292 000	–	–	279 000	–	–
B.3.03	Handling and Storage of Spent Fuel from Research and Test Reactors	1998	NENF	1.0	0.4	229 000	–	30 000	228 000	–	110 000
B.3.04	Technical Developments in the Back End of the Fuel Cycle	Cont.	NENF	0.7	0.3	218 000	–	20 000	190 000	–	20 000
	Sub – total B.3.			4.0	2.2	1 099 000	–	315 000	1 050 000	–	295 000
B.4.	Information on the Nuclear Fuel Cycle										
B.4.01	Nuclear Fuel Cycle Systems (New Project)	1997	NENF	0.5	0.5	114 000	40 000	–	113 000	40 000	–
B.4.02	Plutonium Accumulation and Emerging Problems (Old B.2.04)	Cont.	NENF	0.5	0.3	141 000	–	–	140 000	–	–
B.4.03	Nuclear Fuel Cycle Data bases (Old B.4.01)	Cont.	NENF	0.6	0.2	87 000	50 000	–	100 000	50 000	–
	Sub – total B.4.			1.6	1.0	342 000	90 000	–	353 000	90 000	–
Programme B – Nuclear Fuel Cycle				10.5	6.0	2 595 000	90 000	1 385 000	2 641 000	90 000	1 215 000

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.

B

Subprogramme B.1

Raw Materials for Reactor Fuels

Main Accomplishments (1991-94)

B/4. An assessment of world uranium resources, production and demand has been published in co-operation with OECD/NEA (the Red Book). The last report (1994) represents the most comprehensive summary published on the subject. It contains reports from 49 countries and includes, for the first time, information from the Czech Republic, Kazakhstan, Lithuania, Mongolia, the Russian Federation, Slovakia, Ukraine and Uzbekistan, some of which are major uranium producers.

B/5. With about 700 records, the Agency's database has become the most complete source of information on world uranium deposits, vital for long term analysis on uranium supply and demand projections. This information formed the basis for the preparation of the World Atlas of Uranium Deposits.

B/6. A total of 16 publications on uranium resources, exploration, mining and mill operation and closure, in situ leaching methods, laboratory analytical techniques, computer applications and environmental studies were issued.

B/7. Technical support was provided for some 25-30 TC projects in 20-25 countries annually.

Main Activities Planned for 1995-96

B/8. The regular budget resources for this subprogramme will show a slight overall decrease. There will, however, be an increase for the work on uranium supply and demand data (where there is a need to evaluate and harmonize the data from countries not previously submitting information). Reductions will be made on work related to uranium exploration and mining technology. TC project activity will remain at the same level as in 1993-94.

B/9. The next version of the Red Book on uranium resources, production and demand (prepared jointly with the OECD/NEA) will be issued in 1996.

B/10. It is planned to produce a number of technical documents containing guidelines on, or reviewing the status of developments in, such areas as: uranium resource classification; uranium resources and production in eastern Europe and central Asia; long term supply/demand analysis of uranium; economics and technological options in uranium production; uranium in situ leaching; environmental impact assessment and licensing; and radioelement and radon maps for environmental studies and monitoring.

B/11. A new activity will start in the form of a service to requesting Member States in reviewing the operational safety of their uranium mines and mills. The radiation aspects of these reviews are described in para. H/25.

Subprogramme B.2

Reactor Fuel Technology and Performance

Main Accomplishments (1991-94)

B/12. The Agency provided a forum of information exchange among Member States on various aspects of reactor materials and fuel performance in normal, abnormal and accident conditions including: quality assurance and quality control in fuel fabrication, fuel behaviour at high burnup, fuel and materials behaviour in normal and accident conditions, fuel modelling up to extended burnup, water chemistry related to activity transport, cladding corrosion and hydrating, post-irradiation examination, fuel failures and stress corrosion cracking of zirconium alloys, advanced fuel and recycling of uranium and plutonium in MOX fuel. A total of 35 publications have been issued since 1989.

Main Activities Planned for 1995-96

B/13. The overall regular budget resources are reduced from those of 1993-94. There will be a slight decrease in the number of TC projects.

B/14. It is planned to provide a forum for the exchange of experience on water reactor material and fuel (first safety barrier) under steady state, abnormal and accident conditions, giving special emphasis to high duty conditions such as high temperature, power cycling and high burnup. It is also planned to help developing Member States to acquire and/or improve their capability of using water reactor fuel in a safe, economical and reliable manner.

B/15. It is intended to reinforce Agency action in three important directions during this period: the study of core materials in severe accident conditions, updating knowledge in the area of fuel failure and undertaking a new action on high temperature on-line monitoring of water chemistry related to fuel behaviour and activity transport with the objective of minimizing corrosion, hydrating and irradiation exposures in water cooled reactors.

B/16. CRPs on fuel modelling at extended burnup, burnable absorber fuel for LWRs, examination and documentation methodology for water reactor fuel and stress corrosion cracking in Zircaloy will continue.

Subprogramme B.3

Spent Fuel Management, Technology and Safety

Main Accomplishments (1991-94)

B/17. The Agency has promoted a broad and systematic exchange of information and experience on the safety, economics and methods of spent fuel storage and on the strategies, options and different aspects of spent fuel management as a whole.

B/18. A set of Safety Series documents on the long term storage of spent fuel from power reactors has been completed.

B/19. International studies were carried out on the behaviour of spent fuel assemblies under long term storage conditions with the aim of providing information for a reliable database.

Main Activities Planned for 1995-96

B/20. The regular budget resources for this subprogramme are more or less constant for 1995, but show a decrease in 1996. The figures represent the effect of a reduction in one area, reflecting the fact that a symposium was held in the last biennium, and increases in spent fuel management from test and research reactors and the back-end of the fuel cycle (1995). It is expected that some 7-10 TC projects will be supported.

B/21. It is planned to continue to collect, evaluate, analyse and disseminate information on spent fuel from both power and research reactor discharge, storage capacity requirements, and storage options and practices worldwide, and to provide Member States with information on the development of safe technical solutions. The focus will be on the safety of long term storage of spent fuel.

B/22. It is planned to organize upon request Irradiated Fuel Management Programme (IFMAP) advisory missions to provide advice to developing countries on the management of spent fuel from both power and research reactors.

B/23. The elaboration of a Safety Guide on the extended interim storage of spent fuel from research and test reactors is expected to be completed by 1996.

B/24. The compilation of the first comprehensive database on fuel management and storage for power and research reactors is expected to be completed by 1996 and the results published.

B/25. Three CRPs will be continued: the long term behaviour of spent fuel assemblies; the safety, environmental and non-proliferation aspects of partitioning and transmutation of actinides and fission products; and irradiation enhanced degradation of materials in spent fuel storage facilities.

Subprogramme B.4

Information on the Nuclear Fuel Cycle

Main Accomplishments (1991-94)

B/26. The Nuclear Fuel Cycle Information System database was transferred from the mainframe computer to a personal computer environment. This permits distribution of the data together with an application program on diskettes. The information was used to produce a technical document which contains a directory of nuclear fuel cycle facilities.

B/27. The Nuclear Fuel Cycle Balance and Actinide databases were established to provide a generic model and the related data for the assessment of nuclear fuel cycle materials worldwide. The report was published in a technical document.

B/28. The worldwide inventories of separated plutonium were estimated. These estimates were later confirmed using information supplied by Member States.

B/29. Work to identify and address problems resulting from the accumulation of separated plutonium was started. Subjects considered include safe handling, transportation and storage.

Main Activities Planned for 1995-96

B/30. There is a considerable increase in the regular budget funding for this subprogramme, owing to the integration of activities covering the entire nuclear fuel cycle and an enhanced emphasis on work relating to plutonium management. There will be some reduction in extrabudgetary resources (from Japan) since the work referring to comparative studies has been shifted to subprogramme X.

B/31. The Nuclear Fuel Cycle Information System (NFCIS) database will be updated annually and the data issued in the form of a Reference Data Series publication every other year.

B/32. An analysis of proliferation resistant fuel cycle concepts will be conducted. This analysis will seek to identify new approaches to the proliferation problem.

B/33. A database of current and projected inventories of separated plutonium will be developed. A report will be published and updated biannually. A review and revision of Safety Series No. 39 (Safe Handling of Plutonium) will be carried out to incorporate recent data and experience. A review and analysis of experience related to the long term safe storage of plutonium will be carried out to develop a guide to good practice. Technical support for the international management of plutonium and highly enriched uranium will continue. This effort will be expanded to include analysis of problems concerning the utilization of materials from dismantled weapons.

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT

C/1. Resources for this programme have increased considerably in recent years. This trend continues with provision made for additional resources for activities on the decontamination of nuclear sites, the monitoring of marine radioactivity, the accelerated preparation of RADWASS documents and the strengthening of waste management infrastructures in developing countries.

C/2. The overall objective is to contribute to the safe management of all kinds of radioactive wastes arising from the nuclear fuel cycle and nuclear application activities. Major programme activities include the development of an international consensus on fundamentals, principles and criteria for the safe management of radioactive wastes, the exchange of technical information on all aspects of waste management systems and assistance in establishing and strengthening infrastructures in developing countries.

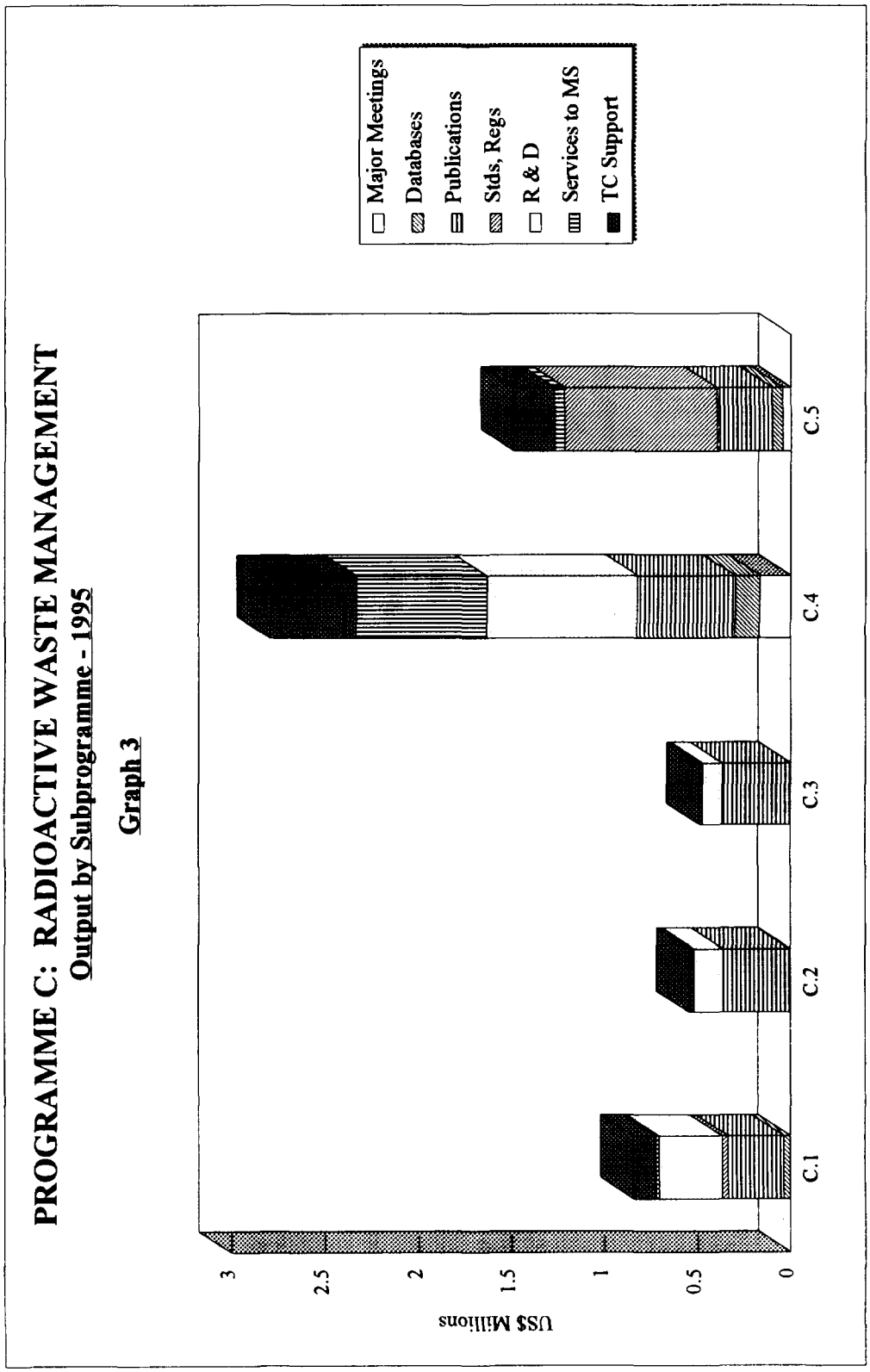
C/3. Those activities of the IAEA-MEL in Monaco which relate to assessments of the consequences of disposal and releases of radioactivity into the marine environment will continue to be co-ordinated under this programme.

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
Summary of Regular Budget estimates by subprogramme
Table 12

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
C.1	Handling, Treatment, Conditioning and Storage of Radioactive Wastes	NENF	656 000	152 000	23.2	808 000	(70 000)	(8.7)	738 000	5.0	848 000	4.0	805 000
	Additional high–priority activities		–	92 000	–	92 000	–	–	92 000	5.0	97 000	4.0	101 000
C.2	Radioactive Waste Disposal	NENF	555 000	(39 000)	(7.0)	516 000	26 000	5.0	542 000	5.6	545 000	3.8	595 000
C.3	Decontamination and Decommissioning of Nuclear Installations	NENF	365 000	101 000	27.7	466 000	55 000	11.8	521 000	4.9	489 000	3.8	568 000
C.4	Radiological and Environmental	NENF	821 000	(123 000)	(15.0)	698 000	17 000	2.4	715 000	5.4	736 000	4.2	786 000
	Aspects of Waste Management	RIML	1 897 000	83 000	4.4	1 980 000	–	–	1 980 000	4.1	2 062 000	3.3	2 129 000
	Additional high–priority activities	RIML	395 000	105 000	26.6	500 000	(500 000)	(100.0)	–	4.1	521 000	–	–
C.5	Waste Management Planning and Infrastructure	NENF	1 225 000	191 000	15.6	1 416 000	65 000	4.6	1 481 000	5.4	1 493 000	4.0	1 623 000
Programme C – Radioactive Waste Management			5 519 000	365 000	6.6	5 884 000	93 000	1.6	5 977 000	4.9	6 173 000	3.8	6 506 000
Additional high–priority activities			395 000	197 000	49.9	592 000	(500 000)	(84.5)	92 000	4.4	618 000	4.1	101 000

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

C


PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
Output by Subprogramme - 1995
Graph 3
US$ Millions
0
0.5
1
1.5
2
2.5
3
C.1
C.2
C.3
C.4
C.5
Major Meetings
Databases
Publications
Stds, Regs
R & D
Services to MS
TC Support

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
Summary of Regular Budget Estimates by Project
Table 13

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
C.1.	Handling, Treatment, Conditioning and Storage of Radioactive Wastes													
C.1.01	Minimizing Volumes of Radioactive Wastes Generated from Nuclear Fuel Cycle Facilities	1998	NENF	46 000	46 000	100.0	92 000	9 000	9.8	101 000	5.0	97 000	4.0	110 000
C.1.02	Quality Assurance and Quality Control Requirements for Radioactive Waste Packages	1997	NENF	279 000	(88 000)	(31.5)	191 000	(4 000)	(2.1)	187 000	5.0	200 000	4.0	204 000
C.1.03	Advanced Technologies for the Processing of Radioactive Waste from the Nuclear Fuel Cycle	1998	NENF	124 000	57 000	46.0	181 000	(42 000)	(23.2)	139 000	5.0	189 000	4.0	152 000
C.1.04	Support for the Safe Management of Spent Radiation Sources in Developing Countries	Cont.	NENF	86 000	87 000	101.2	173 000	(1 000)	(0.6)	172 000	5.0	182 000	4.0	188 000
C.1.05	Handling, Processing and Storage of Radioactive Waste from Nuclear Applications and Radioisotope Production – (New Title)	Cont.	NENF	121 000	50 000	41.3	171 000	(32 000)	(18.7)	139 000	5.0	180 000	4.0	151 000
	Additional high-priority activities		NENF	–	92 000	–	92 000	–	–	92 000	5.0	97 000	4.0	101 000
	Sub – total C.1.			656 000	152 000	23.2	808 000	(70 000)	(8.7)	738 000	5.0	848 000	4.0	805 000
	Additional high-priority activities			–	92 000	–	92 000	–	–	92 000	5.0	97 000	4.0	101 000
C.2.	Radioactive Waste Disposal													
C.2.01	Technologies for Near-surface Disposal Systems for Low- and Intermediate- Level Radioactive Wastes	Cont.	NENF	204 000	(12 000)	(5.9)	192 000	4 000	2.1	196 000	5.6	203 000	3.8	215 000
C.2.02	Quality Assurance Management for Waste Disposal Systems	1997	NENF	163 000	(20 000)	(12.3)	143 000	(5 000)	(3.5)	138 000	5.6	151 000	3.8	152 000
C.2.03	Technologies for Deep Geological Disposal Systems for High-Level Radioactive Wastes	Cont.	NENF	188 000	(7 000)	(3.7)	181 000	27 000	14.9	208 000	5.6	191 000	3.8	228 000
	Sub – total C.2.			555 000	(39 000)	(7.0)	516 000	26 000	5.0	542 000	5.6	545 000	3.8	595 000

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
Summary of Regular Budget Estimates by Project
Table 13 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
C.3.	Decontamination and Decommissioning of Nuclear Installations													
C.3.01	Development of Decontamination and Decommissioning Technology	1998	NENF	238 000	(6 000)	(2.5)	232 000	(5 000)	(2.2)	227 000	4.9	243 000	3.8	247 000
C.3.02	Project Planning and Management for Decommissioning Operations	1997	NENF	127 000	22 000	17.3	149 000	10 000	6.7	159 000	4.9	156 000	3.8	173 000
C.3.03	Planning and Management of Environmental Restoration Activities	1999	NENF	–	85 000	–	85 000	50 000	58.8	135 000	4.9	90 000	3.8	148 000
	Sub – total C.3.			365 000	101 000	27.7	466 000	55 000	11.8	521 000	4.9	489 000	3.8	568 000
C.4.	Radiological and Environmental Aspects of Waste Management													
C.4.01	Radiological and Safety Criteria for Radioactive Waste Management (Combination of Old C.4.01 and C.4.02)	Cont.	NENF	267 000	(80 000)	(30.0)	187 000	(16 000)	(8.6)	171 000	5.4	197 000	4.2	188 000
C.4.02	Safety Assessment in Radioactive Waste Management (Old C.4.03)	Cont.	NENF	139 000	8 000	5.8	147 000	14 000	9.5	161 000	5.4	155 000	4.2	177 000
C.4.03	Impact Assessment of Wastes in the Environment (Old C.4.04)	2001	NENF	168 000	16 000	9.5	184 000	7 000	3.8	191 000	5.4	194 000	4.2	210 000
C.4.04	Environmental Studies in Relation to Marine Disposal (Old C.4.05)	Cont.	NENF	247 000	(169 000)	(68.4)	78 000	12 000	15.4	90 000	5.4	82 000	4.2	99 000
C.4.05	International Arctic Seas Assessment Project (IASAP) (New Project)	1996	NENF	–	102 000	–	102 000	–	–	102 000	5.4	108 000	4.2	112 000
C.4.06	Support for Marine Radioactivity Monitoring	Cont.	RIML	962 000	36 000	3.7	998 000	(6 000)	(0.6)	992 000	4.2	1 040 000	3.3	1 067 000
C.4.07	Research on Radionuclides in the Marine Environment	Cont.	RIML	935 000	47 000	5.0	982 000	6 000	0.6	988 000	4.1	1 022 000	3.3	1 062 000
C.4.	Additional high – priority activities		RIML	395 000	105 000	26.6	500 000	(500 000)	(100.0)	–	4.1	521 000	–	–
	Sub – total C.4.			2 718 000	(40 000)	(1.5)	2 678 000	17 000	0.6	2 695 000	4.5	2 798 000	3.6	2 915 000
	Additional high – priority activities			395 000	105 000	26.6	500 000	(500 000)	(100.0)	–	4.1	521 000	–	–

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
Summary of Regular Budget Estimates by Project
Table 13 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
C.5.	Waste Management Planning and Infrastructure													
C.5.01	Waste Management Information System	Cont.	NENF	230 000	28 000	12.2	258 000	22 000	8.5	280 000	5.4	272 000	4.0	307 000
C.5.02	Radioactive Waste Safety Standards (RADWASS)	2001	NENF	670 000	149 000	22.2	819 000	3 000	0.4	822 000	5.4	863 000	4.0	901 000
C.5.03	Direct Assistance and Support for National Waste Management Programmes	Cont.	NENF	325 000	14 000	4.3	339 000	40 000	11.8	379 000	5.4	358 000	4.0	415 000
	Sub – total C.5.			1 225 000	191 000	15.6	1 416 000	65 000	4.6	1 481 000	5.4	1 493 000	4.0	1 623 000
Programme C – Radioactive Waste Management				5 519 000	365 000	6.6	5 884 000	93 000	1.6	5 977 000	4.9	6 173 000	3.8	6 506 000
Additional high–priority activities				395 000	197 000	49.9	592 000	(500 000)	(84.5)	92 000	4.4	618 000	4.1	101 000

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
List of projects and estimated total resources for 1995 and 1996
Table 14

Project Codes		Project Durat.	Respon. Division	1995 Staffing		Estimated Total Resources for 1995			Estimated Total Resources for 1996		
				P	GS	Regular Budget	Extra-Budgetary	TACF a/	Regular Budget	Extra-Budgetary	TACF a/
C.1.	Handling, Treatment, Conditioning and Storage of Radioactive Wastes										
C.1.01	Minimizing Volumes of Radioactive Wastes Generated from Nuclear Fuel Cycle Facilities	1998	NENF	0 6	0.2	97 000	–	131 000	110 000	–	131 000
C.1 02	Quality Assurance and Quality Control Requirements for Radioactive Waste Packages	1997	NENF	0.8	0 6	200 000	–	39 000	204 000	–	39 000
C.1.03	Advanced Technologies for the Processing of Radio-active Waste from the Nuclear Fuel Cycle	1998	NENF	0.5	0.2	189 000	–	–	152 000	–	–
C 1 04	Support for the Safe Manage-ment of Spent Radiation Sources in Developing Countries	Cont	NENF	–	–	182 000	–	112 000	188 000	–	112 000
C.1 05	Handling, Processing and Storage of Radioactive Waste from Nuclear Applications and Radio-isotope Production (New Title)	Cont.	NENF	0 4	0.4	180 000	–	708 000	151 000	–	708 000
	Additional high-priority activities		NENF	–	–	97 000	–	–	101 000	–	–
	Sub – total C.1.			2.3	1.4	848 000	–	990 000	805 000	–	990 000
	Additional high-priority activities			–	–	97 000	–	–	101 000	–	–
C 2.	Radioactive Waste Disposal										
C.2 01	Technologies for Near-surface Disposal Systems for Low- and Intermediate- Level Radioactive Wastes	Cont.	NENF	0.8	0.5	203 000	80 000	51 000	215 000	–	51 000
C.2.02	Quality Assurance Management for Waste Disposal Systems	1997	NENF	0.7	0.4	151 000	–	43 000	152 000	–	43 000
C.2 03	Technologies for Deep Geological Disposal Systems for High-Level Radioactive Wastes	Cont	NENF	0 7	0.4	191 000	–	–	228 000	–	–
	Sub – total C.2.			2.2	1.3	545 000	80 000	94 000	595 000	–	94 000
C.3.	Decontamination and Decommissioning of Nuclear Installations										
C 3 01	Development of Decontamination and Decommissioning Technology	1998	NENF	0 7	0 7	243 000	–	112 000	247 000	–	112 000
C 3 02	Project Planning and Management for Decommissioning Operations	1997	NENF	0 5	0 5	156 000	–	–	173 000	–	–
C 3.03	Planning and Management of Environmental Restoration Activities	1999	NENF	–	–	90 000	–	–	148 000	–	–
	Sub –total C 3.			1 2	1 2	489 000	–	112 000	568 000	–	112 000

PROGRAMME C: RADIOACTIVE WASTE MANAGEMENT
List of projects and estimated total resources for 1995 and 1996
Table 14 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a_/
C.4.	Radiological and Environmental Aspects of Waste Management										
C.4.01	Radiological and Safety Criteria for Radioactive Waste Management (Combination of Old C.4.01 and C.4.02)	Cont.	NENF	1.0	0.6	197 000	–	–	188 000	–	–
C.4.02	Safety Assessment in Radio-active Waste Management (Old C.4.03)	Cont.	NENF	0.5	0.3	155 000	–	189 000	177 000	–	189 000
C.4.03	Impact Assessment of Wastes in the Environment (Old C.4.04)	2001	NENF	0.7	0 5	194 000	–	–	210 000	–	–
C.4.04	Environmental Studies in Relation to Marine Disposal (Old C.4.05)	Cont.	NENF	0.4	0.3	82 000	–	–	99 000	–	–
C.4.05	International Arctic Seas Assessment Project (IASAP) (New Project)	1996	NENF	0.8	0.3	108 000	115 000	–	112 000	91 000	–
C.4.06	Support for Marine Radioactivity Monitoring	Cont.	RIML	4 1	7.7	1 040 000	110 000	–	1 067 000	110 000	–
C.4.07	Research on Radionuclides in the Marine Environment	Cont.	RIML	4.0	6.5	1 022 000	210 000	–	1 062 000	220 000	–
C.4.	Additional high-priority activities		RIML	–	–	521 000	–	–	–	–	–
			NENF	3.4	2.0	736 000	115 000	189 000	786 000	91 000	189 000
			RIML	8.1	14.2	2 062 000	320 000	–	2 129 000	330 000	–
	Sub-total C.4.			11.5	16.2	2 798 000	435 000	189 000	2 915 000	421 000	189 000
	Additional high-priority activities			–	–	521 000	–	–	–	–	–
C.5.	Waste Management Planning and Infrastructure										
C.5.01	Waste Management Informa-tion System	Cont.	NENF	1.2	0.6	272 000	–	–	307 000	–	–
C.5.02	Radioactive Waste Safety Standards (RADWASS)	2001	NENF	4.8	1.3	863 000	154 000	–	901 000	105 000	–
C.5.03	Direct Assistance and Support for National Waste Management Programmes	Cont.	NENF	0.4	0.2	358 000	49 000	282 000	415 000	–	282 000
	Sub – total C.5.			6.4	2.1	1 493 000	203 000	282 000	1 623 000	105 000	282 000
Programme C – Radioactive Waste Management				23.6	22.2	6 173 000	718 000	1 667 000	6 506 000	526 000	1 667 000
Additional high-priority activities				–	–	618 000	–	–	101 000	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme C.1

Handling, Treatment, Conditioning and Storage of Radioactive Wastes

Main Accomplishments (1991-94)

C/4. A number of documents were published on the processing and storage of radioactive waste generated in the nuclear fuel cycle, covering such topics as: conditioning of spent nuclear fuel for final waste disposal and its evaluation as a final waste form; vitrification and storage of high level liquid wastes; conditioning of alpha bearing wastes; volume reduction techniques for solid and liquid wastes; immobilization of radioactive wastes into bitumen and cement matrices; and design, fabrication and handling procedures for different types of containers used for packaging of solidified wastes.

C/5. A comprehensive programme on quality assurance for all types of radioactive waste packages was initiated and resulted in the publication of documents setting out quality assurance requirements and providing guidance to Member States on the application of control and verification methods associated with the production of waste packages to ensure their compliance with transport, interim storage and disposal requirements.

C/6. A series of technical manuals on the management of low and intermediate level waste generated at small nuclear research centres and by radioisotope users in medicine, research and industry was completed. The objective was to enhance the flow of technical information on waste handling and processing to developing Member States and to provide straightforward and low cost solutions to waste management problems. A new project on the safe management of spent radiation sources was started. Information on locating and identifying spent sources was published and a spent radiation source registry was developed.

C/7. The level of activities in radioactive waste management training was considerably increased and the scope of the training was broadened to cover such subjects as a systematic approach to waste management, national waste management infrastructures, the management of spent sealed radiation sources and other waste from nuclear applications, management of waste from nuclear power plants and quality assurance in waste management.

C/8. A seminar was conducted on waste management practices and issues in developing countries.

C/9. A Safety Guide on the design and operation of radioactive waste incineration facilities was published.

Main Activities Planned for 1995-96

C/10. Overall resources remain essentially unchanged, with regular budget resources allocated to activities formerly covered by extrabudgetary contributions. Close liaison will be maintained with TC projects and support will be maintained for about 30 such projects in the area of pre-disposal management.

C/11. Publications will be prepared on improved technologies and administrative measures to be applied for the minimization of radioactive waste generated from nuclear fuel cycle facilities, including techniques for reuse and recycling of radioactive and non-radioactive components of waste streams and treatment of special off-gas waste streams from nuclear power plants. Research will be supported on waste treatment and immobilization technologies involving inorganic sorbents and information on this subject will be exchanged through CRPs.

C/12. With regard to quality assurance in pre-disposal radioactive waste management, it is planned to complete by 1997 a set of technical documents setting out requirements and providing guidance on measures to be taken in the production of waste packages acceptable for transport, storage and disposal. Topics will include inspection procedures for the implementation of quality assurance programmes, maintenance of records and documentation for radioactive waste processing and storage facilities and the effects of long term storage on waste package characteristics.

C/13. In addition, assistance to small producers of radioactive waste (generated from radioisotope production and nuclear applications) on the safe handling, processing and storing of such waste will be given in the form of technical documents, the provision of advisory services and increased training activities. To help reduce the risk of spent sealed sources becoming unaccounted for in Member States, documents will be prepared on the conditioning and storage of spent radium sources and on the handling, conditioning and storage of spent sources. Efforts will be undertaken to foster regional co-operation in the management and disposal of spent radiation sources.

C/14. Additional high priority activities would relate to building waste management infrastructures in developing Member States through support for research on conditioning technologies for wastes generated from nuclear applications and the characterization of the resulting waste forms. The results of this work would be reported through a research co-ordination meeting.

Subprogramme C.2

Radioactive Waste Disposal

Main Accomplishments (1991-94)

C/15. Several documents on radioactive waste disposal technology were published, covering such topics as: a review of available options for low level radioactive waste disposal; technical manuals for siting and design of near surface radioactive waste disposal facilities; quality assurance for siting, design, construction, operation and post-closure of radioactive waste disposal facilities; and performance of engineered barriers in deep geological repositories.

C/16. A CRP on the geochemistry of long lived transuranic actinides and fission products was completed and a final report published. CRPs on the performance of engineered barrier materials in near surface disposal facilities and on the extrapolation of short term observations to time periods necessary for the isolation of long lived radioactive wastes were initiated.

C/17. A seminar on the storage and disposal of low level radioactive wastes and an international symposium on the geological disposal of spent fuel, high level and alpha bearing wastes were conducted.

Main Activities Planned for 1995-96

C/18. Regular budget resources will be maintained and some extrabudgetary resources representing one cost free expert are expected. Some 5-6 TC projects will be supported on the disposal of low level waste in near surface repositories.

C/19. In this subprogramme, a project will be continued to review and prepare reports on concepts for near surface disposal of low and intermediate level radioactive wastes. A technical document on the factors affecting the siting of a regional near surface disposal facility, which will be particularly helpful to developing Member States with small waste disposal programmes, will be completed. A CRP on the performance of engineered barrier materials in near surface disposal facilities will be completed and a final report published. A seminar to inform scientists and engineers from developing Member States on operating experience and planning for near surface disposal facilities will be conducted.

C/20. A project will be continued to prepare technical documents on various important aspects of quality assurance in achieving safe disposal of radioactive waste. Technical documents will be completed on the maintenance of records and documentation for near surface and geological disposal facilities, and preparation will be initiated of a report on inspection procedures and requirements for receipt of waste at near surface disposal facilities.

C/21. Work will also continue on the review and preparation of reports on important issues relating to the technology for geological disposal of spent fuel and high level radioactive waste. Reports will be published on hydrogeological investigations of sites for geological disposal of high level radioactive wastes and on the use of natural analogues as a tool for validation of hydrogeological transport models for waste repositories. Research will continue on the extrapolation of short term test results to the long time scales needed for the isolation of long lived radioactive waste.

Subprogramme C.3

Decontamination and Decommissioning of Nuclear Installations

Main Accomplishments (1991-94)

C/22. Emphasis continued to be placed on the exchange of information on decommissioning technologies. Attention focused on issues of concern to developing countries, such as the decommissioning of research reactors, closeout of mill tailings and other residues, and the development of decommissioning oriented regulations and guides. A CRP on decontamination and decommissioning technology was completed and a final report published.

C/23. A technical report on the decommissioning of a nuclear reactor after a severe accident was published. A regional project to assist central and eastern European Member States in the area of environmental restoration was started in 1993.

C/24. A seminar was conducted on ageing, decommissioning and/or major refurbishment of research reactors.

Main Activities Planned for 1995-96

C/25. Additional regular budget funding is provided for a new project in planning and management for decontamination/decommissioning of contaminated nuclear sites. TC projects (some 6 projects) will be supported in the areas of cleanup of uranium mining/milling tailings and decontamination/decommissioning of small research facilities. Some of the work under this subprogramme will be complemented by that described in para. H/22, which deals with radiation safety aspects.

C/26. Assistance will be given to developing countries in planning and management activities for decommissioning operations through a regional seminar on the decommissioning of research reactors. A CRP will be organized on site characterization techniques for planning restoration activities, and the preparation will begin of technical documents on site characterization methodologies and policy, and safety and environmental considerations in the determination of a restoration strategy. This activity will be complemented by work described in para. H/22.

C/27. In the technological field, emphasis will be shifted to cover the decommissioning of non-reactor nuclear fuel cycle facilities and the radiological and physical characterization of shutdown installations. A CRP will be conducted on decontamination technology for maintenance and decommissioning.

Subprogramme C.4

Radiological and Environmental Aspects of Waste Management

Main Accomplishments (1991-94)

C/28. The programme on the application to the waste management area of principles for exempting radiation sources from regulatory control has continued; guidance has been published on the application of the principles to the recycling and reuse of materials and to wastes from the use of radionuclides in medicine and research. On the basis of these studies, a set of values applicable to materials irrespective of their intended usage or final destination has been derived (unconditional clearance levels). A report on these recommended values has been published within the RADWASS programme.

C/29. As a result of international discussions, agreement was reached on a set of common values which allow radiation sources to be exempted from the requirements of the new IAEA/NEA/WHO/FAO/PAHO/ILO Basic Safety Standards and also of the CEC Directive on Radiation Protection.

C/30. Through the forum established on principles and criteria for radioactive waste disposal, consensus positions have been established on the safety philosophy regarding long term containment periods for high level waste. Informal reports have been issued on topics such as: time-scales for long term safety assessments, suitable indicators of safety in the long term, optimization of radiation protection, monitoring strategy in the post-closure period of repositories and the interface between waste management and safeguards.

C/31. An international programme to assess the potential impact of the dumping of high level radioactive wastes in the Arctic seas has been established in co-operation with the Governments of Norway and the Russian Federation. The Agency acted in its role as the competent international body on matters related to radioactive materials in the marine context to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention 1972).

C/32. The IAEA Marine Environment Laboratory in Monaco worked on the behaviour, fate and impact of fission products, activation products, transuranic elements, natural radionuclides and analogue rare earth elements in coastal and open ocean regimes. The Laboratory has been involved in making a preliminary assessment of the consequences of nuclear waste dumping in the Arctic seas. New underwater survey methods have been developed for emergency response purposes. Radioanalytical techniques in the Laboratory have also been improved and included in a worldwide analytical quality control service and training programmes. The Laboratory has also expanded its use of isotopic marine tracers to delineate key processes in the carbon cycle and in the transfer of Chernobyl-derived nuclides in the oceans. A CRP on radioactivity in the Black Sea has been initiated to assist regional Member States to improve their monitoring capacities and to use radiotracers to understand processes in this environmentally stressed sea. An advanced radiation mapping project using monitoring equipment deployed by helicopter was carried out in the River Danube basin.

Main Activities Planned for 1995-96

C/33. The reduction in regular budget resources for NENF activities reflects the completion of several activities related to radioactive waste exemption. Assistance in performing safety assessments for waste management facilities will be provided to Member States under TC projects (3-4 projects). Regular budget resources for IAEA-MEL are increased to provide additional support to the subprogramme in the area of monitoring marine radioactivity.

C/34. With regard to the continuing programme on the application of exemption principles, guidance will be developed and a report prepared on cleanup levels for land areas contaminated as a result of past nuclear activities and a document giving guidance on quantities which can be regarded as "non-radioactive" in the context of disposal into the sea will be completed.

C/35. In 1995 a symposium on the environmental impact of radioactive releases will be held. The meeting will provide an opportunity for reviewing on-going work in many countries on the impact of past events at nuclear sites. The results of Agency co-ordinated studies on testing and validating environmental transfer models will also be reviewed.

C/36. Two new programmes for testing the capabilities of national experts for predicting the behaviour of radionuclides in the environment will be started. Both will be based on the formats of previously successful CRPs. The first will be concerned with evaluating the safety provided by waste repositories located near the land surface and the second will aim at testing predictions of the radiation dose to humans received as a result of living and working in contaminated land areas.

C/37. Several important programmes from the 1993-94 period will continue into 1995-96; these include the forum on principles and criteria for radioactive waste disposal, the safety assessment advisory service and the inventory of radionuclide inputs to the marine environment (reports to be completed in 1996). The International Arctic Seas Assessment Programme (IASAP) is expected to be completed in 1996 with the issuance of an assessment report and recommendations for follow-up actions. Extrabudgetary support for IASAP will cover the cost of expert travel to research co-ordination and other meetings and the funding of research contracts.

C/38. IAEA-MEL support work will focus on enhancing a wide range of measurement and assessment capabilities in national institutions and involves analytical quality assurance services, in-service training, regional and interregional training courses, and the development and maintenance of global marine radioactivity databases.

C/39. The Laboratory's provision of a global database on marine radioactivity will be of considerable value to assessments of man-made perturbations. The research programme will continue to focus on the dispersion, transfer and radiological consequences of radioactive discharges and disposals, the behaviour and transfer of key marine radionuclides and the development and application of predictive computer models of pollutant distributions, transfers and radiological impacts. These models will be extended to cover a full range of marine accident scenarios, including those related to nuclear powered shipping and to the transportation of nuclear fuel and nuclear wastes. Laboratory experiments using radiotracers will be aimed at providing information needed for specific radiological assessments, including rates of radionuclide cycling and transfers into organisms and sediments under simulated conditions. This capacity is available to other Agency activities, for example the Emergency Response System.

C/40. By 1995-96, the move to the new IAEA-MEL premises should be complete and the biennium should therefore see the first substantive long term benefits, including an expanded TC programme and an improved experimental output. In 1993-94, Member States were invited to contribute $900 000 to the costs of furnishing and equipping the new laboratory. Fulfillment of this requirement and completion of the move will remain the highest priority additional activities during the 1995-96 biennium and would require a further $521 000. Proposals for new optimal performance counting laboratory services are also being evaluated and may result in a later proposal for an additional high priority activity of the order of $500 000.

Subprogramme C.5

Waste Management Planning and Infrastructure

Main Accomplishments (1991-94)

C/41. The radioactive waste management database has continued to be a useful tool in providing information to Member States.

C/42. Work on Phase I (1991-94) of the Radioactive Waste Safety Standards (RADWASS) programme started with the preparation of the 12 highest priority documents, which will be published or will be ready for publication by the end of 1994. The programme has been reviewed by the International Radioactive Waste Management Advisory Committee (INWAC) and future activities have been defined. The advisory (WAMAP) and peer review (WATRP) services have been used in accordance with the requests of Member States. Between 1991 and 1993, 14 WAMAP and fact finding missions were organized in developing Member States and 4 missions are planned in 1994.

Main Activities Planned for 1995-96

C/43. Overall regular budget resources show an increase, reflecting accelerated preparation of RADWASS documents and increased tasks to strengthen waste management infrastructures in developing countries, but there is not yet a commitment for a continuation of the 1994 level of extrabudgetary support.

C/44. The first main component of this subprogramme will be the development of a set of Safety Series publications on the management of radioactive waste within the RADWASS programme. Member States will be provided with a comprehensive series of internationally agreed upon documents to complement national standards and criteria. After the completion of twelve highest priority documents in Phase I of the programme, which includes the RADWASS Safety Fundamentals, four Safety Standards, five Safety Guides and two Safety Practices, work on Phase II (1995-98) will begin. The first part of Phase II (1995-96) includes the preparation of two remaining Safety Standards (on the geological disposal of radioactive waste and the management of waste from mining and milling of uranium and thorium ores), nine Safety Guides and one Safety Practices document. A cost-free expert will be available to the project to assist in the preparation of key Safety Guides.

C/45. The second focus of attention will be increased assistance to developing countries — mainly through the provision of advisory missions and training — in establishing and improving national waste management programmes. The Waste Management Advisory Programme (WAMAP) will be a key component of this work, and 5-6 missions a year are planned. This assistance will be strengthened by introducing WAMAP follow-up missions and providing TC support.

C/46. International peer reviews of national radioactive waste management concepts, programmes or facilities will be offered under the Waste Management Assessment and Technical Review Programme (WATRP). Teams of experts will carry out peer reviews upon request by Member States.

C/47. To provide the background needed for the planning of radioactive waste management programmes, the Agency will collect information and disseminate documents on current radioactive waste management technologies and national radioactive waste management infrastructures and waste management research in progress. A document on the cost of waste disposal and decommissioning will be started.

SUBPROGRAMME X: COMPARATIVE ASSESSMENT OF NUCLEAR POWER AND OTHER ENERGY SOURCES

Summary of Regular Budget estimates by subprogramme

Table 15

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
X	Comparative Assessment of	NENP	1 478 000	(105 000)	(7.1)	1 373 000	–	–	1 373 000	5.2	1 445 000	3.9	1 501 000
	Nuclear Power and Other	NENF	176 000	(1 000)	(0.6)	175 000	8 000	4.6	183 000	5.7	185 000	3.1	199 000
	Energy Sources	NENS	279 000	88 000	31.5	367 000	17 000	4.6	384 000	5.2	386 000	3.5	418 000
Subprogramme X			1 933 000	(18 000)	(0.9)	1 915 000	25 000	1.3	1 940 000	5.3	2 016 000	3.7	2 118 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

SUBPROGRAMME X: COMPARATIVE ASSESSMENT OF NUCLEAR POWER AND OTHER ENERGY SOURCES

Summary of Regular Budget Estimates by Project

Table 16

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
X	Comparative Assessment of Nuclear Power and Other Energy Sources													
X.01	Assessment of Costs of Nuclear Power and Other Energy Systems	Cont.	NENP	381 000	(2 000)	(0.5)	379 000	–	–	379 000	5.3	399 000	3.8	414 000
			NENF	110 000	(110 000)	(100.0)	–	–	–	–	–	–	–	–
X.02	IAEA/UNEP/UNIDO/WHO Project on Risk Assessment (Old X.03)	1996	NENS	80 000	22 000	27.5	102 000	(10 000)	(9.8)	92 000	4.9	107 000	3.1	100 000
X.03	Comparative Assessment of the Health and Local, Regional and Global Environmental Impacts of Nuclear Power and Other Energy Systems (Old X.02 and X.04)	Cont.	NENP	464 000	(112 000)	(24.1)	352 000	–	–	352 000	5.4	371 000	3.8	385 000
			NENS	199 000	66 000	33.2	265 000	27 000	10.2	292 000	5.3	279 000	3.6	318 000
			NENF	66 000	(66 000)	(100.0)	–	–	–	–	–	–	–	–
X 04	Incorporation of Comparative Assessments in Energy and Electricity Planning (Old X.05)	Cont.	NENP	633 000	9 000	1.4	642 000	–	–	642 000	5.1	675 000	4.0	702 000
X 05	Comparative Assessment of the Health and Environmental Risks from Near-Surface Disposal of Solid Hazardous Wastes (New project)	1997	NENF	–	175 000	–	175 000	8 000	4.6	183 000	5.7	185 000	3.1	199 000
Subprogramme X				1 933 000	(18 000)	(0.9)	1 915 000	25 000	1.3	1 940 000	5.3	2 016 000	3.7	2 118 000

X. COMPARATIVE ASSESSMENT

SUBPROGRAMME X: COMPARATIVE ASSESSMENT OF NUCLEAR POWER AND OTHER ENERGY SOURCES

List of projects and estimated total resources for 1995 and 1996

Table 17

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a_/
X	Comparative Assessment of Nuclear Power and Other Energy Sources										
X.01	Assessment of Costs of Nuclear Power and Other Energy Systems	Cont.	NENP	1.6	0 7	399 000	–	100 000	414 000	–	100 000
X.02	IAEA/UNEP/UNIDO/WHO Project on Risk Assessment (Old X.03)	1996	NENS	0 3	0.2	107 000	–	80 000	100 000	–	80 000
X.03	Comparative Assessment of the Health and Local, Regional and Global Environmental Impacts of Nuclear Power and Other Energy Systems (Old X.02 and X.04)	Cont.	NENP NENS NENF	1.3 0.7 –	1.1 0.2 –	371 000 279 000 –	132 000 – 160 000	– 50 000 –	385 000 318 000 –	132 000 – 160 000	– 50 000 –
X.04	Incorporation of Comparative Assessments in Energy and Electricity Planning (Old X.05)	Cont.	NENP	1.9	1 0	675 000	–	200 000	702 000	–	400 000
X.05	Comparative Assessment of the Health and Environmental Risks from Near-Surface Disposal of Solid Hazardous Wastes (New project)	1997	NENF	–	–	185 000	–	–	199 000	–	–
Subprogramme X				5.8	3.2	2 016 000	292 000	430 000	2 118 000	292 000	630 000

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates

SUB-PROGRAMME X: COMPARATIVE ASSESSMENT OF NUCLEAR POWER AND OTHER ENERGY SOURCES

Main Accomplishments (1991-1994)

X/1. Work continued in co-operation with OECD/NEA and the IEA on electricity generation and nuclear fuel cycle costs; reports were completed and published in 1993.

X/2. Economic, health and environmental indicators for electricity systems based on renewable energies were reviewed and a report was published. Work continued on assessing the economics of renewable energy systems, and on improvements to the Agency's planning models to take into account the irregular energy availability characteristics of renewable energy systems, in particular those based on solar and wind energy.

X/3. Contributions to the Intergovernmental Panel on Climate Change (IPCC) continued to be provided through Agency participation in the various IPCC working groups. Work continued on the assessment of the role of nuclear energy in limiting emissions of carbon dioxide and other greenhouse gases by replacing fossil fuels in electricity generation. Several papers on this topic were presented at major international meetings.

X/4. The interagency joint project (DECADES) on databases and methodologies for the comparative assessment of different energy sources for electricity generation was formally established, with the participation of the CEC, the Economic and Social Commission for Asia and the Pacific (ESCAP), the World Bank (IBRD), IIASA, the OECD/NEA, OPEC, UNIDO and WMO. Other organizations, such as OLADE, UNEP and WHO, are co-operating by contributing data and information from their ongoing programmes. A joint secretariat for the DECADES project was established between the Agency, IIASA, OPEC and UNIDO (the 'Vienna Four'). In the framework of the DECADES project, significant progress was made on the establishment of the Reference Technologies Data Base (RTDB), covering technical and economic parameters, emission factors, and health and environmental indicators of nuclear, fossil and renewable energy systems for electricity generation. An operational prototype version of the RTDB is planned to be available for testing by selected users by the end of 1994. Work was initiated on the development of graphical user interface software for the RTDB, and on an energy chain analysis system software. Operational prototype versions of both forms of software will be completed in 1994. A review of methodologies, models and tools for comparative assessment was carried out and the results were published.

X/5. Meetings were held on the health and environmental impact (including factors unrelated to radiation) of nuclear fuel cycle facilities under normal and accident conditions. Work continued on assessing and comparing costs of waste management systems for nuclear and fossil energy systems. Reports on these topics were published.

X/6. A pilot version of a computerized database on the health and environmental impacts of energy systems (HEIES) was developed.

X/7. Work continued on the interagency (IAEA, UNEP, UNIDO, WHO) project on the assessment and management of health and environmental risks of energy systems and other large industrial systems. A procedural guide to risk management was published, a manual on risk

prioritization was finalized and a prototype expert system (PRIORITIZE) was developed and tested. Case studies have been carried out in 15 countries and the results from some have been published. Work continued on the development of computer models for the assessment of risks and management of air and surface pollution by wastes in large industrial complexes. Software on the assessment of health and environmental risks and management of industrial/energy systems (HERAMIS) was developed. HERAMIS includes numerical data, information in hypertext form and decision simulation models.

Main Activities Planned for 1995-96

X/8. Overall, the regular budget for subprogramme X remains in 1995-96 at the same level as in 1993-94. Extrabudgetary resources are expected to increase and since the subprogramme will enter into a phase involving the transfer of data and computer tools to Member States and training activities, it is expected that the number of projects supported by TC will increase. Extrabudgetary resources, some 15% of the regular budget for the subprogramme, will support the participation of the Agency in the work of the Intergovernmental Panel on Climate Change (IPCC) and the assessment of health and environmental impacts of nuclear fuel cycle facilities. For 1995-96, projects have been streamlined and restructured taking into account the evolution of the programme. The tasks related to the integrated approach to energy and nuclear power planning will be carried out under project A.1.01, the budget for which has increased accordingly. A new project is planned on the comparative assessment of the health and environmental risks from near surface disposal of solid hazardous wastes. This reflects the high priority of the issue of waste disposal on national and international agendas.

X/9. The outcomes from subprogramme X will include comprehensive reports and computer tools to be distributed to Member States for enhancing capabilities for effective decision making and implementation of optimized electricity systems, taking into account health and environmental issues. Such documents, databases and analytical tools will help in the comprehensive assessment of the viability of nuclear power in Member States contemplating the implementation of nuclear programmes.

X/10. Most activities will be carried out in the framework of two inter-Agency joint projects: the project on risk assessment, with the participating agencies being the IAEA, UNEP, UNIDO and WHO and the DECADES (Databases and Methodologies for Comparative Assessment of Different Energy Sources for Electricity Generation) project, with participation by CEC, ESCAP, IAEA, IBRD, IIASA, OECD/NEA, OPEC, UNIDO and WMO.

X/11. *Assessment of costs of nuclear and other energy system.* Efforts will concentrate on the comprehensive assessment of the costs of nuclear, fossil and renewable energy systems for both electrical and non-electrical applications. Cost assessment methodologies will be compiled, and a number of studies will be conducted, in co-operation with NEA, IEA and other organizations, to obtain the data needed for the comparisons. Publications on this work will assist Member States in the use of the methodologies.

X/12. *IAEA/UNEP/UNIDO/WHO Project on Risk Assessment.* Work will focus on the completion of the various procedural guides, software and expert systems related to risk assessment and management in energy systems and other large industrial systems, and on the transfer of these tools to interested Member States. Assistance in the use of these tools will be

given through training workshops and in the context of case studies. Extra emphasis will be placed on acquiring data for overall comparison purposes.

X/13. *Comparative assessment of the health and local, regional and global environmental impacts of nuclear power and other energy systems.* This project amalgamates projects X.02 and X.04 (1993-94) and will cover ecological and global change issues. Work will continue on the compilation of a database on the health and environmental impacts of different energy sources and fuel cycles, and on approaches for assessing and comparing nuclear and other energy systems from the viewpoint of their potential contribution to, or role in mitigating, health and local, regional and global impacts from electricity generation. Through a CRP, case studies on comparative risk assessment of nuclear and other energy systems will be promoted. TC projects will be supported. Support to the work of the IPCC will continue, through participation in, and preparation of relevant papers for, the working groups and their specialized subgroups. The contribution of the Agency to the work of IPCC is mainly funded by extrabudgetary resources. The activities of NENF within this project, related to the assessment of health and environment impacts of nuclear fuel cycle facilities, will be funded in 1995-96 by extrabudgetary resources. Contributions from the organizations participating in the DECADES project will support some of the data collection and review activities.

X/14. *Incorporation of comparative assessments in energy and electricity planning.* This project was shown as X.05 in the 1993-94 budget. The main focus will continue to be on databases and methodologies (expert systems, decision aiding tools, etc.) for incorporating comparative assessments into energy policy, planning and decision making. The reference technology database (RTDB) will be completed, related software will be developed and users' manuals and procedural guides published, and the databases and software made available to Member States. Through the TC programme, training and assistance will be provided for carrying out national energy, electricity and nuclear power planning studies incorporating economic factors and health and environment related aspects. In the context of a CRP, and in co-operation with the other organizations participating in the DECADES project, case studies on the comparison of nuclear power and other energy systems for electricity generation will be promoted and assisted. Results from these case studies will be published. Regional or national workshops for decision makers and policy makers in developing countries, on different comparative aspects of nuclear and other energy systems, will be organized on request. A symposium on Electricity, Health and the Environment: Databases and Methodologies for Comparative Assessment will be organized in 1995. Contributions from other organizations participating in the DECADES projects will support some of the activities.

X/15. *Comparative assessment of the health and environment risks from near surface disposal of solid hazardous wastes.* This project will involve the comparative assessment of the risks to human health and to the environment from currently practised methods of hazardous waste disposal in the near surface environment. A collection of the practices used for near surface disposal of hazardous wastes will be compiled in co-operation with UNEP, WHO and other organizations. A common methodology for evaluating the risks presented by solid waste disposal facilities will be developed and the availability of models to assess the impact on the environment from the different hazardous wastes will be reviewed. The project will be completed with a comparison of the risks associated with the different types of hazardous wastes disposed of in near surface repositories. The work conducted under this project will be published in Agency reports.

MAJOR PROGRAMME 2

NUCLEAR APPLICATIONS

MAJOR PROGRAMME 2
NUCLEAR APPLICATIONS
Summary of total resources by programme
Table 18

	Programme / Major Programme		1995 Staffing P	1995 Staffing GS	1995 Regular Budget estimates	1995 Funds from other UN organizations	1995 Other extra-budgetary resources	1995 TACF a_/	1996 Regular Budget estimates	1996 Funds from other UN organizations	1996 Other extra-budgetary resources	1996 TACF a_/
D.	Food and Agriculture	RIFA	16.0	8.0	10 098 000	2 546 000	1 740 000	14 326 000	10 576 000	2 646 000	1 680 000	14 326 000
		RIAL	13.0	28.9								
	Additional high-priority activities		4.0	2.0	1 099 000	–	–	–	1 144 000	–	–	–
E.	Human Health	RIHU	14.9	10.6	5 683 000	1 450 000	373 000	6 337 000	5 882 000	1 500 000	348 000	6 337 000
		RIAL	2.3	8.1								
		RIML	0.9	2.8								
	Additional high-priority activities		1.0	1.0	591 000	–	–	–	686 000	–	–	–
F.	Industry and Earth Sciences	RIPC	6.8	4.3	3 400 000	–	–	8 875 000	3 562 000	–	–	8 875 000
		RIAL	4.4	11.7								
	Additional high-priority activities		1.0	1.0	227 000	–	–	–	438 000	–	–	–
G.	Physical and Chemical Sciences	RIPC	18.6	12.8	8 312 000	374 000	15 718 000	10 716 000	8 608 000	374 000	12 569 000	10 716 000
		RIAL	4.1	15.9								
		RITP	7.0	25.0								
		RIHU	1.1	0.4								
	Additional high-priority activities		1.5	1.15	585 000	–	–	–	635 000	–	–	–
	Major Programme 2		89.1	128.5	27 493 000	4 370 000	17 831 000	40 254 000	28 628 000	4 520 000	14 597 000	40 254 000
	Additional high-priority activities		7.5	5.15	2 502 000	–	–	–	2 903 000	–	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME D: FOOD AND AGRICULTURE

D/1. The aim of this programme is to strengthen the capability of national agricultural research establishments and universities in developing countries to solve agricultural problems using nuclear techniques. The programme is partially guided by the FAO Medium Term Plan (1992-97) and reflects the results of the United Nations Conference on Environment and Development (UNCED) and the International Conference on Nutrition. The results obtained from the programme, which is run jointly with FAO, will be incorporated into the relevant programmes of FAO.

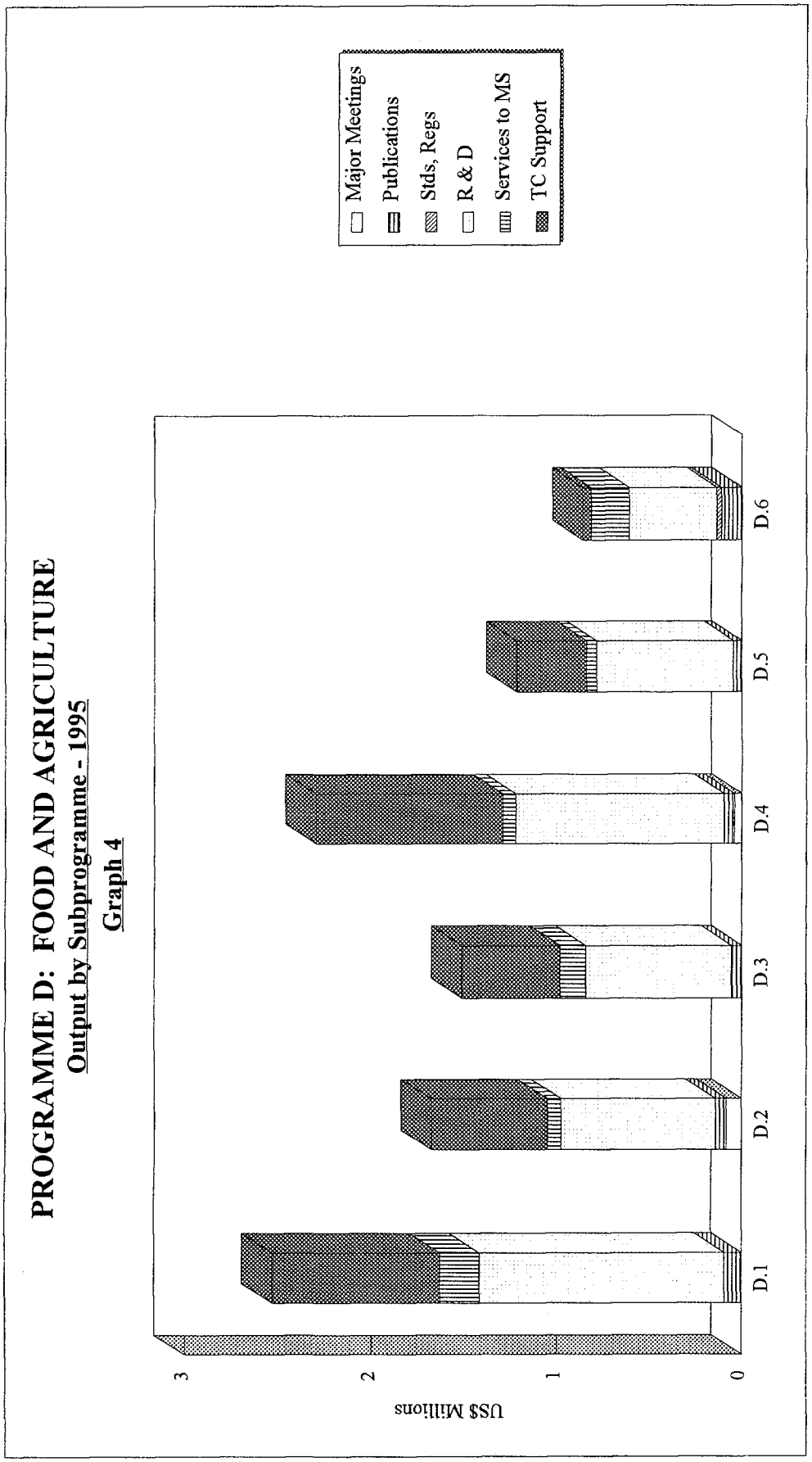
D/2. It is planned to continue work in six main areas: soil fertility, irrigation and crop production; plant breeding and genetics; animal production and health; insect and pest control; agrochemicals and residues; and food preservation. The level of interest in, and priority assigned to, each of these areas varies from region to region.

D/3. During 1995-96 emphasis will be increased significantly on (a) implementing the concept of sustainability of food production as an underlying principle, (b) incorporation of nuclear based molecular biology into agricultural research and development and (c) application of quality assurance for food and pesticide analyses and animal disease diagnosis. Activities that will be phased out in this period include fertilizer placement studies, nitrogen fixation by grain and pasture legumes, the effects of irradiation on somatic cells of plants, work with sheep, goats and camelids, controlled release formulations of pesticides and the use of irradiation for extending the shelf-life of foods. TC activities will increasingly be formatted as model projects in order to speed up the delivery of benefits to end users.

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget estimates by subprogramme
Table 19

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.1	Soil Fertility, Irrigation and Crop Production	RIFA/ RIAL	2 447 000	(35 000)	(1.4)	2 412 000	60 000	2.5	2 472 000	4.9	2 531 000	4.1	2 698 000
	Additional high-priority activities		–	90 000	–	90 000	–	–	90 000	4.9	94 000	4.1	98 000
D.2	Plant Breeding and Genetics	RIFA/ RIAL	1 616 000	(15 000)	(0.9)	1 601 000	(35 000)	(2.2)	1 566 000	4.7	1 677 000	4.0	1 707 000
	Additional high-priority activities		–	90 000	–	90 000	–	–	90 000	4.7	94 000	4.0	98 000
D.3	Animal Production and Health	RIFA/ RIAL	1 238 000	206 000	16.6	1 444 000	–	–	1 444 000	4.8	1 513 000	4.0	1 574 000
	Additional high-priority activities		–	300 000	–	300 000	–	–	300 000	4.8	314 000	4.0	327 000
D.4	Insect and Pest Control	RIFA/ RIAL	2 082 000	114 000	5.5	2 196 000	–	–	2 196 000	4.7	2 299 000	4.1	2 394 000
	Additional high-priority activities		–	100 000	–	100 000	–	–	100 000	4.7	105 000	4.1	109 000
D.5	Agrochemicals and Residues	RIFA/ RIAL	1 319 000	(160 000)	(12.1)	1 159 000	36 000	3.1	1 195 000	5.0	1 217 000	4.1	1 305 000
	Additional high-priority activities		–	90 000	–	90 000	–	–	90 000	5.0	95 000	4.1	99 000
D.6	Food Preservation	RIFA	826 000	(3 000)	(0.4)	823 000	–	–	823 000	4.6	861 000	4.1	898 000
	Additional high-priority activities		–	380 000	–	380 000	–	–	380 000	4.6	397 000	4.1	413 000
Programme D – Food and Agriculture			9 528 000	107 000	1.1	9 635 000	61 000	0.6	9 696 000	4.8	10 098 000	4.1	10 576 000
	Additional high-priority activities		–	1 050 000	–	1 050 000	–	–	1 050 000	4.7	1 099 000	4.1	1 144 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.


PROGRAMME D: FOOD AND AGRICULTURE
Output by Subprogramme - 1995
Graph 4
Major Meetings
Publications
Stds, Regs
R & D
Services to MS
TC Support
US$ Millions
0
1
2
3
D.1
D.2
D.3
D.4
D.5
D.6

D

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.1.	Soil Fertility, Irrigation and Crop Production													
D.1.01	Maximizing Biological Nitrogen Fixation, and Development of Molecular Biological Techniques in Soil / Plant Systems	Cont.	RIFA RIAL	552 000	(189 000)	(34.2)	363 000	(5 000)	(1.4)	358 000	4.9	382 000	4.1	389 000
D.1.02	Developing Sustainable Agroforestry and Soil Management Systems for Optimizing Crop Production	Cont.	RIFA RIAL	628 000	(151 000)	(24.0)	477 000	44 000	9.2	521 000	4.9	500 000	4.1	569 000
D.1.03	Maximizing the Efficient Use of Plant Nutrients and Managing the Soil to Conserve Resources and Preserve the Environment	Cont.	RIFA RIAL	425 000	(20 000)	(4.7)	405 000	44 000	10.9	449 000	4.9	425 000	4.1	490 000
D.1.04	Increasing the Effective Use of Scarce Water Resources to Maximize Plant Productivity	1999	RIFA RIAL	463 000	36 000	7.8	499 000	(80 000)	(16.0)	419 000	4.9	523 000	4.1	458 000
D.1.05	Crops and Soil Management for Increased Productivity with Emphasis on Marginal Soils	2005	RIFA RIAL	309 000	(63 000)	(20.4)	246 000	(1 000)	(0.4)	245 000	4.9	258 000	4.1	268 000
D.1..06	Radiation Processing of Sewage Sludge and its Use to Increase Crop Yields and to Preserve the Environment (Joint project with F.1.07)	2000	RIFA RIAL	–	359 000	–	359 000	58 000	16	417 000	4.9	377 000	4.1	455 000
D.1	Additional high–priority activities Increasing the Yield of Root and Tuber Crops Through Soil, Plant and Fertilizer Management through a CRP		RIFA	–	90 000	–	90 000	–	–	90 000	4.9	94 000	4.1	98 000
D.1.GA	General Activities	Cont.	RIFA	70 000	(7 000)	(10.0)	63 000	–	–	63 000	4.9	66 000	4.1	69 000
	Sub–total D.1.			2 447 000	(35 000)	(1.4)	2 412 000	60 000	2.5	2 472 000	4.9	2 531 000	4.1	2 698 000
	Additional high–priority activities			–	90 000	–	90 000	–	–	90 000	4.9	94 000	4.1	98 000

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.2.	Plant Breeding and Genetics													
D.2.01	Genetic Improvement of Food Crops (Combination of D.2.01 and D.2.02)	Cont.	RIFA RIAL	371 000	(12 000)	(3.2)	359 000	(6 000)	(1.7)	353 000	4.7	376 000	4.0	386 000
D.2.02	Genetic Improvement of Oil Seed and Industrial Crops (D.2.03 in 1994)	1999	RIFA RIAL	179 000	(13 000)	(7.3)	166 000	22 000	13.3	188 000	4.7	174 000	4.0	205 000
D.2.03	Induced Mutations and Related Molecular Genetics to Enhance Genetic Diversity for Crop Improvment (Combination of D.2.04 and D.2.05)	Cont.	RIFA RIAL	576 000	(222 000)	(38.5)	354 000	(67 000)	(18.9)	287 000	4.7	371 000	4.0	312 000
D.2.04	In Vitro Techniques for Mutation Induction and Selection (D.2.06 in 1994)	1999	RIFA RIAL	183 000	204 000	111.5	387 000	61 000	15.8	448 000	4.7	405 000	4.0	488 000
D.2.05	Information on Mutation Breeding and Mutant Germplasm (D.2.07 in 1994)	Cont.	RIFA RIAL	109 000	(11 000)	(10.1)	98 000	(1 000)	(1.0)	97 000	4.7	103 000	4.0	106 000
D.2.06	Radiation Seed Treatment Services (New project)	Cont.	RIFA RIAL	–	69 000	–	69 000	(2 000)	(2.9)	67 000	4.7	72 000	4.0	73 000
D.2	Additional high–priority activities Improvement of Potential and Neglected Food Crops through a CRP		RIFA	–	90 000	–	90 000	–	–	90 000	4.7	94 000	4.0	98 000
D.2.GA	General Activities	Cont.	RIFA RIAL	198 000	(30 000)	(15.2)	168 000	(42 000)	(25.0)	126 000	4.7	176 000	4.0	137 000
	Sub – total D.2.			1 616 000	(15 000)	(0.9)	1 601 000	(35 000)	(2.2)	1 566 000	4.7	1 677 000	4.0	1 707 000
	Additional high–priority activities			–	90 000	–	90 000	–	–	90 000	4.7	94 000	4.0	98 000

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.3.	Animal Production and Health													
D.3.01	Development of Feeding and Breeding Strategies for Improving the Productivity of Milk-producing Livestock	1998	RIFA RIAL	714 000	(205 000)	(28.7)	509 000	37 000	7.3	546 000	4.8	533 000	4.0	596 000
D.3.02	Seromonitoring and Surveillance of Rinderpest in Support of the Global Rinderpest Eradication Campaign (GREC)	Cont.	RIFA RIAL	65 000	18 000	27.7	83 000	(1 000)	(1.2)	82 000	4.8	87 000	4.0	89 000
D.3.03	Use of Immunoassay Methods for Monitoring Trypanosomiasis Control Programmes in Africa	Cont.	RIFA RIAL	142 000	(2 000)	(1.4)	140 000	36 000	25.7	176 000	4.8	147 000	4.0	191 000
D.3 04	Provision of Immunoassay and Molecular Methods for the Diagnosis and Surveillance of Selected Livestock Diseases (Combination of D.3.04 and D.3.05)	Cont.	RIFA RIAL	281 000	157 000	55.9	438 000	(67 000)	(15.3)	371 000	4.8	459 000	4.0	405 000
D.3.05	Operation of the FAO / IAEA Central Laboratory for ELISA and Molecular Methods in Animal Disease Diagnosis (New Project)	Cont.	RIFA RIAL	–	239 000	–	239 000	(3 000)	(1 3)	236 000	4.8	250 000	4.0	257 000

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.3.06	Development of Feeding, Reproductive Management and Disease Control Strategies for Improving Fish Production from Aquaculture (New Project)	Cont.	RIFA	–	13 000	–	13 000	(2 000)	(15.4)	11 000	4.8	14 000	4.0	12 000
D.3	Additional high–priority activities Development of Feeding, Reproductive Management and Disease Control Strategies for Improving Fish Production		RIFA	–	300 000	–	300 000	–	–	300 000	4.8	314 000	4.0	327 000
D.3.GA	General Activities	Cont.	RIFA	36 000	(14 000)	(38.9)	22 000	–	–	22 000	4.8	23 000	4.0	24 000
	Sub–total D.3.			1 238 000	206 000	16.6	1 444 000	–	–	1 444 000	4.8	1 513 000	4.0	1 574 000
	Additional high–priority activities			–	300 000	–	300 000	–	–	300 000	4.8	314 000	4.0	327 000

D

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.4.	Insect and Pest Control													
D.4.01	Improved Effectiveness of the Sterile Insect Technique for the Control or Eradication of Fruit Flies	Cont.	RIFA RIAL	792 000	136 000	17.2	928 000	(41 000)	(4.4)	887 000	4.7	971 000	4.1	969 000
D.4.02	Improved Effectiveness of the Sterile Insect Technique for the Control or Eradication of Tsetse Flies in Africa	Cont.	RIFA RIAL	826 000	(17 000)	(2.1)	809 000	(10 000)	(1.2)	799 000	4.7	847 000	4.1	871 000
D.4.03	Radiation induced F–1 Sterility for Control of Major Lepidoptera Pests Affecting Food and Fibre Crops in Production and Marketing	Cont.	RIFA	129 000	34 000	26.4	163 000	78 000	47.9	241 000	4.7	171 000	4.1	262 000
D.4.04	Improvement of the SIT for Use Against Screwworms and Other Veterinary and Medical Insect Pests	2002	RIFA RIAL	128 000	(101 000)	(78.9)	27 000	–	–	27 000	4.7	28 000	4.1	29 000
D.4.05	Application of Molecular Biology and Genetic Engineering for the Improvement of Nuclear Based Insect Control Technologies	Cont.	RIFA RIAL	175 000	72 000	41.1	247 000	(27 000)	(10.9)	220 000	4.7	259 000	4.1	239 000
D.4	Additional high–priority activities The Sterile Insect Technique for use Against Mosquitoes that Transmit Malaria through a CRP		RIFA RIAL	–	100 000	–	100 000	–	–	100 000	4.7	105 000	4.1	109 000
D.4.GA	General Activities	Cont.	RIFA	32 000	(10 000)	(31.3)	22 000	–	–	22 000	4.7	23 000	4.1	24 000
	Sub – total D.4.			2 082 000	114 000	5.5	2 196 000	–	–	2 196 000	4.7	2 299 000	4.1	2 394 000
	Additional high–priority activities			–	100 000	–	100 000	–	–	100 000	4.7	105 000	4.1	109 000

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.5.	Agrochemicals and Residues													
D.5.01	Monitoring Pesticide Residues in Food and the Environment	Cont.	RIFA RIAL RIML	731 000	89 000	12.2	820 000	41 000	5.0	861 000	5.0	860 000	4.1	939 000
D.5.02	Improvement and Control of Formulations of Pesticides Using Nuclear Techniques	Cont.	RIFA RIAL	518 000	(268 000)	(51.7)	250 000	(40 000)	(16.0)	210 000	5.0	263 000	4.1	230 000
D.5.03	Emergency Assistance Services to Agriculture in the Event of a Radiological Incident (New Project)	Cont.	RIFA	–	32 000	–	32 000	–	–	32 000	5.0	34 000	4.1	35 000
D.5	Additional high–priority activities Amelioration of Environmental Effects of Pollution from Agriculture and of the Effects on Agriculture of Industrial Pollutants through a CRP		RIFA	–	90 000	–	90 000	–	–	90 000	5.0	95 000	4.1	99 000
D.5.GA	General Activities	Cont.	RIFA	70 000	(13 000)	(18.6)	57 000	35 000	61.4	92 000	5.0	60 000	4.1	101 000
	Sub – total D.5.			1 319 000	(160 000)	(12.1)	1 159 000	36 000	3.1	1 195 000	5.0	1 217 000	4.1	1 305 000
	Additional high–priority activities			–	90 000	–	90 000	–	–	90 000	5.0	95 000	4.1	99 000

PROGRAMME D: FOOD AND AGRICULTURE
Summary of Regular Budget Estimates by Project
Table 20 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.6.	Food Preservation													
D.6.01	Practical Utilization of Food Irradiation in Developing Countries (D 6.03 in 1994)	Cont.	RIFA	204 000	(10 000)	(4.9)	194 000	–	–	194 000	4.6	203 000	4.1	213 000
D.6.02	Expanding the Scope of Food Irradiation Applications (D.6.04 and D 6 05 in 1994)	1999	RIFA	338 000	7 000	2 1	345 000	5 000	1 5	350 000	4.6	361 000	4 1	381 000
D.6.03	Control of the Food Irradiation Process (D.6.02 in 1994)	Cont.	RIFA	106 000	(15 000)	(14.2)	91 000	(4 000)	(4.4)	87 000	4.6	95 000	4.1	95 000
D.6.04	Acceptance of Irradiated Food (D.6.01 in 1994)	Cont.	RIFA	107 000	–	–	107 000	(3 000)	(2.8)	104 000	4.6	112 000	4 1	113 000
D.6	Additional high–priority activities Practical Application and Trade Development of Irradiated Food		RIFA	–	380 000	–	380 000	–	–	380 000	4 6	397 000	4.1	413 000
D.6.GA	General Activities	Cont.	RIFA	71 000	15 000	21.1	86 000	2 000	2.3	88 000	4.6	90 000	4.1	96 000
	Sub–total D.6.			826 000	(3 000)	(0.4)	823 000	–	–	823 000	4.6	861 000	4.1	898 000
	Additional high–priority activities			–	380 000	–	380 000	–	–	380 000	4.6	397 000	4.1	413 000
Programme D – Food and Agriculture				9 528 000	107 000	1.1	9 635 000	61 000	0.6	9 696 000	4.8	10 098 000	4 1	10 576 000
	Additional high–priority activities			–	1 050 000	–	1 050 000	–	–	1 050 000	4.7	1 099 000	4.1	1 144 000

PROGRAMME D: FOOD AND AGRICULTURE
List of projects and estimated total resources for 1995 and 1996
Table 21

Project Codes		Project Durat	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a_/	Estimated Total Resources for 1995 TACF b_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a_/	Estimated Total Resources for 1996 TACF b_/
D.1.	Soil Fertility, Irrigation and Crop Production										
D.1.01	Maximizing Biological Nitrogen Fixation, and Development of Molecular Biological Techniques in Soil / Plant Systems	Cont.	RIFA RIAL	0.2 1.0	0.2 1.5	382 000	–	532 000	389 000	–	532 000
D.1.02	Developing Sustainable Agro-forestry and Soil Management Systems for Optimizing Crop Production	Cont.	RIFA RIAL	0 8 1.0	0.2 1.5	500 000	–	417 000	569 000	–	417 000
D.1.03	Maximizing the Efficient Use of Plant Nutrients and Managing the Soil to Conserve Resources and Preserve the Environment	Cont.	RIFA RIAL	1.0 0.8	0.2 1.0	425 000	–	532 000	490 000	–	532 000
D.1.04	Increasing the Effective Use of Scarce Water Resources to Maximize Plant Productivity	1999	RIFA RIAL	1.0 0 7	0.2 1.1	523 000	–	185 000	458 000	–	185 000
D.1.05	Crops and Soil Management for Increased Productivity with Emphasis on Marginal Soils	2005	RIFA RIAL	0.4 0.4	0.2 0.8	258 000	–	116 000	268 000	–	116 000
D.1..06	Radiation Processing of Sewage Sludge and its Use to Increase Crop Yields and to Preserve the Environment (New project) (Joint project with F.1.07)	2000	RIFA RIAL	0.4 0.5	0.1 1.0	377 000	–	208 000	455 000	–	208 000
D.1	Additional high-priority activities Increasing the Yield of Root and Tuber Crops Through Soil, Plant and Fenlizer Management through a CRP		RIFA	–	–	94 000	–	–	98 000	–	–
D.1.GA	General Activities	Cont.	RIFA	0.4	0.3	66 000	214 000	185 000	69 000	214 000	185 000
			RIFA RIAL	4.2 4.4	1.4 6.9						
	Sub-total D.1. Additional high-priority activities			8.6 –	8.3 –	2 531 000 94 000	214 000 –	2 175 000 –	2 698 000 98 000	214 000 –	2 175 000 –

PROGRAMME D: FOOD AND AGRICULTURE
List of projects and estimated total resources for 1995 and 1996
Table 21 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Extra-Budgetary a_/	TACF b_/	Estimated Total Resources for 1996 Regular Budget	Extra-Budgetary a_/	TACF b_/
D.2.	Plant Breeding and Genetics										
D.2.01	Genetic Improvement of Food Crops (Combination of D.2.01 and D.2.02)	Cont.	RIFA RIAL	0.5 0.7	0.5 1.7	376 000	300 000	699 000	386 000	300 000	699 000
D.2.02	Genetic Improvement of Oil Seed and Industrial Crops (D.2.03 in 1994)	1999	RIFA RIAL	0.2 0.3	0.1 0.8	174 000	–	163 000	205 000	–	163 000
D.2.03	Induced Mutations and Related Molecular Genetics to Enhance Genetic Diversity for Crop Improvment (Combination of D.2.04 and D.2.05)	Cont.	RIFA RIAL	0.5 0.4	0.4 0.9	371 000	–	163 000	312 000	–	163 000
D.2.04	In Vitro Techniques for Mutation Induction and Selection (D.2.06 in 1994)	1999	RIFA RIAL	0.3 0.6	0.1 2.1	405 000	–	326 000	488 000	–	326 000
D.2.05	Information on Mutation Breeding and Mutant Germplasm (D.2.07 in 1994)	Cont.	RIFA RIAL	0.2 0.1	0.1 0.6	103 000	–	47 000	106 000	–	47 000
D.2.06	Radiation Seed Treatment Services (New project)	Cont.	RIFA RIAL	– 0.3	– 0.5	72 000	–	–	73 000	–	–
D.2	Additional high-priority activities Improvement of Potential and Neglected Food Crops through a CRP		RIFA	–	–	94 000	–	–	98 000	–	–
D.2.GA	General Activities	Cont.	RIFA RIAL	0.5 0.1	0.2 0.5	176 000	789 000	395 000	137 000	789 000	395 000
			RIFA RIAL	2.2 2.5	1.4 7.1						
	Sub – total D.2.			4.7	8.5	1 677 000	1 089 000	1 793 000	1 707 000	1 089 000	1 793 000
	Additional high-priority activities			–	–	94 000	–	–	98 000	–	–

PROGRAMME D: FOOD AND AGRICULTURE
List of projects and estimated total resources for 1995 and 1996
Table 21 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a_/	Estimated Total Resources for 1995 TACF b_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a_/	Estimated Total Resources for 1996 TACF b_/
D.3.	Animal Production and Health										
D.3.01	Development of Feeding and Breeding Strategies for Improving the Productivity of Milk-producing Livestock	1998	RIFA RIAL	1.1 0.3	0.5 1.2	533 000	–	750 000	596 000	–	750 000
D.3.02	Seromonitoring and Surveillance of Rinderpest in Support of the Global Rinderpest Eradication Campaign (GREC)	Cont.	RIFA RIAL	0.2 0.1	0.3 0.2	87 000	430 000	607 000	89 000	530 000	607 000
D.3.03	Use of Immunoassay Methods for Monitoring Trypanosomiasis Control Programmes in Africa	Cont.	RIFA RIAL	0.3 –	0.2 0.4	147 000	540 000	807 000	191 000	540 000	807 000
D.3.04	Provision of Immunoassay and Molecular Methods for the Diagnosis and Surveillance of Selected Livestock Diseases (Combination of D.3.04 and D.3.05)	Cont.	RIFA RIAL	0.3 0.5	0.2 1.2	459 000	–	930 000	405 000	–	930 000
D.3.05	Operation of the FAO / IAEA Central Laboratory for ELISA and Molecular Methods in Animal Disease Diagnosis (New Project)	Cont.	RIFA RIAL	0.1 0.5	– 1.3	250 000	–	930 000	257 000	–	930 000
D.3.06	Development of Feeding, Reproductive Management and Disease Control Strategies for Improving Fish Production from Aquaculture (New Project)	Cont.	RIFA	0.1	–	14 000	–	–	12 000	–	–
D.3	Additional high-priority activities Development of Feeding, Reproductive Management and Disease Control Strategies for Improving Fish Production		RIFA	2.0	1.0	314 000	–	–	327 000	–	–
D.3.GA	General Activities	Cont.	RIFA	0.1	0.1	23 000	236 000	–	24 000	236 000	–
			RIFA RIAL	2.2 1.4	1.3 4.3						
	Sub-total D.3.			3.6	5.6	1 513 000	1 206 000	4 024 000	1 574 000	1 306 000	4 024 000
	Additional high-priority activities			2.0	1.0	314 000	–	–	327 000	–	–

D

PROGRAMME D: FOOD AND AGRICULTURE
List of projects and estimated total resources for 1995 and 1996
Table 21 (Contd.)

Project Codes		Project Durat	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a_/	Estimated Total Resources for 1995 TACF b_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a_/	Estimated Total Resources for 1996 TACF b_/
D 4	Insect and Pest Control										
D.4.01	Improved Effectiveness of the Sterile Insect Technique for the Control or Eradication of Fruit Flies	Cont.	RIFA RIAL	0 7 1 6	0.4 4.5	971 000	100 000	1 800 000	969 000	100 000	1 800 000
D.4.02	Improved Effectiveness of the Sterile Insect Technique for the Control or Eradication of Tsetse Flies in Africa	Cont.	RIFA RIAL	0 7 1.2	0.5 4.0	847 000	–	2 200 000	871 000	–	2 200 000
D.4.03	Radiation induced F-1 Sterility for Control of Major Lepidoptera Pests Affecting Food and Fiber Crops in Production and Marketing	Cont.	RIFA	0 4	0 2	171 000	–	500 000	262 000	–	500 000
D.4 04	Improvement of the SIT for Use Against Screwworms and Other Veterinary and Medical Insect Pests	2002	RIFA RIAL	0.2 –	0 1 –	28 000	–	500 000	29 000	–	500 000
D.4 05	Application of Molecular Biology and Genetic Engineering for the Improvement of Nuclear Based Insect Control Technologies	Cont	RIFA RIAL	0.1 0.6	0 1 0 6	259 000	–	–	239 000	–	–
D 4	Additional high-priority activities The Sterile Insect Technique for use Against Mosquitoes that Transmit Malaria through a CRP		RIFA RIAL	–	–	105 000	–	–	109 000	–	–
D 4.GA	General Activities	Cont.	RIFA	–	–	23 000	470 000	–	24 000	470 000	–
			RIFA RIAL	2.1 3.4	1.3 9.1						
	Sub - total D.4.			5.5	10.4	2 299 000	570 000	5 000 000	2 394 000	570 000	5 000 000
	Additional high-priority activities			–	–	105 000	–	–	109 000	–	–
D 5.	Agrochemicals and Residues										
D.5.01	Monitoring Pesticide Residues in Food and the Environment	Cont.	RIFA RIAL RIML	1 4 1.1 –	0.8 1.3 –	860 000	600 000	700 000	939 000	540 000	700 000
D 5.02	Improvement and Control of Formulations of Pesticides Using Nuclear Techniques	Cont.	RIFA RIAL	0 4 0 2	0 1 0.2	263 000	–	95 000	230 000	–	95 000
D.5.03	Emergency Assistance Services to Agriculture in the Event of a Radiological Incident (New Project)	Cont.	RIFA	0 1	0.1	34 000	–	–	35 000	–	–
D 5	Additional high-priority activities Amelioration of Environmental Effects of Pollution from Agriculture and of the Effects on Agriculture of Industrial Pollutants through a CRP		RIFA	–	–	95 000	–	–	99 000	–	–
D.5 GA	General Activities	Cont.	RIFA	0 3	0.2	60 000	279 000	–	101 000	279 000	–
			RIFA RIAL	2.2 1.3	1.2 1 5						
	Sub - total D 5.			3 5	2 7	1 217 000	879 000	795 000	1 305 000	819 000	795 000
	Additional high-priority activities			–	–	95 000	–	–	99 000	–	–

PROGRAMME D: FOOD AND AGRICULTURE
List of projects and estimated total resources for 1995 and 1996
Table 21 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a_/	Estimated Total Resources for 1995 TACF b_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a_/	Estimated Total Resources for 1996 TACF b_/
D.6.	Food Preservation										
D.6.01	Practical Utilization of Food Irradiation in Developing Countries (D.6.03 in 1994)	Cont.	RIFA	0.6	0.3	203 000	–	439 000	213 000	–	439 000
D.6 02	Exapanding the Scope of Food Irradiation Applications (D.6.04 and D.6.05 in 1994)	1999	RIFA	0.8	0.5	361 000	–	–	381 000	–	–
D.6.03	Control of the Food Irradiation Process (D.6.02 in 1994)	Cont	RIFA	0.5	0.2	95 000	–	–	95 000	–	–
D.6.04	Acceptance of Irradiated Food (D.6.01 in 1994)	Cont.	RIFA	0.6	0.2	112 000	–	–	113 000	–	–
D.6	Additional high-priority activities Practical Application and Trade Development of Irradiated Food		RIFA	2.0	1.0	397 000	–	–	413 000	–	–
D.6.GA	General Activities	Cont.	RIFA	0.6	0.2	90 000	328 000	100 000	96 000	328 000	100 000
	Sub-total D.6.			3.1	1.4	861 000	328 000	539 000	898 000	328 000	539 000
	Additional high-priority activities			2.0	1.0	397 000	–	–	413 000	–	–
			RIFA	16.0	8.0						
			RIAL	13.0	28.9						
Programme D – Food and Agriculture				29.0	36.9	10 098 000	4 286 000	14 326 000	10 576 000	4 326 000	14 326 000
	Additional high-priority activities			4.0	2.0	1 099 000	–	–	1 144 000	–	–

a_/ Includes funds from other UN organizations.
b_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

D

Subprogramme D.1

Soil Fertility, Irrigation and Crop Production

Main Accomplishments (1991-94)

D/4. Agronomic evaluation of rock phosphates using ^{32}P has resulted in the identification of several phosphate rocks suitable for direct application as a phosphate fertilizer. These phosphate rocks are now being tested further in large scale field demonstration trials through the FAO fertilizer programme.

D/5. A wide genetic variability, which can be exploited to increase biological nitrogen fixation in plants, has been discovered using the ^{15}N methodology. In the nitrogen fixing tree *Casuarina*, up to a tenfold difference in nitrogen fixation was found among different genotypes. In grain legumes, crossing of cultivars with high nitrogen fixation but low yields with those having low nitrogen fixation but high yields has resulted in the production of lines with both high yield and high nitrogen fixation.

D/6. Cultivars of cowpea and provenances of fast growing tree species capable of producing good growth and yield in soils poor in phosphate and water resources have been identified. Field screening using the ^{13}C isotope discrimination technique and neutron probes resulted in the identification of wheat cultivars highly efficient in water use and therefore suitable for introduction into semi-arid and arid regions.

D/7. A beta-glucuronidase (GUS) marker gene to study the competitive ability of *Rhizobium* (nitrogen fixing bacterium) strains has been developed. This gene marker system is being incorporated into a kit for use in developing countries to find ways by which the efficiency of applied *Rhizobium* inoculum could be increased to enhance crop production.

Main Activities Planned for 1995-96

D/8. The minor changes — decrease in 1995, increase in 1996 — in the regular budget resources are mainly due to the redistribution of the Seibersdorf Laboratory costs and do not therefore reflect any significant change in the volume of activity in this subprogramme. In fact, additional regular budget resources will be provided to support the initiation of a new project on radiation processing of sewage sludge and its use as fertilizer to decrease the environmental impact of its disposal as waste. This project is a joint effort with the programme in Physical and Chemical Sciences. The anticipated amount of extrabudgetary resources will remain at the 1994 level. During the 1995-96 period, the TC effort in the area of soil fertility and crop production is expected to increase to about 80 projects.

D/9. There will be a shift in emphasis to phosphate fertilizers and on increasing soil organic matter, the efficient use of water, and the extended use of molecular markers to investigate the movement of nitrogen fixing bacteria in the soil.

D/10. A major emphasis will be placed on developing integrated fertilizer management practices that will combine minimal chemical fertilizer inputs with nutrient additions from organic matter

sources such as those derived from legume/*Rhizobium* nitrogen fixing systems. Development of such systems will also lessen the adverse effects of chemical fertilizer applications on the environment. The activities will focus on countries in the Africa, Asia and the Pacific, Latin America and Middle East regions and should result in reduced reliance on chemical fertilizers.

D/11. Efforts will also continue on the agronomic evaluation of phosphate fertilizers, especially rock phosphates. In addition, studies are planned on irrigation schedules for field crops to help increase the effective use of limited water resources. Studies on crop production in deleterious environments will focus on acid soils.

D/12. An additional high priority activity would involve a CRP on increasing the yield of root and tuber crops through soil, plant and fertilizer management.

Subprogramme D.2

Plant Breeding and Genetics

Main Accomplishments (1991-94)

D/13. Through CRPs and TC projects, efforts have focused on the development and implementation of radiation techniques and related biotechnologies for improvement of staple food crops in developing countries, with special emphasis on Africa and the Latin American region. The newly established techniques have been transferred to plant breeding institutes in developing countries in order to strengthen their ability to use nuclear and related techniques to create genetic variation and select desired variants of crops suitable for adverse environmental conditions. The Agency's Laboratories at Seibersdorf have played an important role in the development of biotechnological methods for mutation breeding of tropical crops, the transfer of this technology through Agency training courses and fellowship programmes, and the provision of irradiation services to Member States.

D/14. Promising mutants with improved characters of importance for further domestication of this local crop were selected from irradiated populations of African rice. Desired characters such as short height and increased yield have also been introduced into African germplasm of sorghum. An earlier bean mutant with resistance to golden mosaic virus, a disease which devastated bean fields in Brazil, was successfully used in a cross-breeding programme, giving a new, high yielding bean variety. In addition, new methods of cereal doubled haploids production have been introduced in most Latin American countries. These methods, including microspore cultures, have many important applications in the conventional and mutation breeding of crops.

D/15. The contribution of radiation techniques to crop improvement was discussed and a programme of future activities was formulated during an FAO/IAEA seminar on the use of mutation and related biotechnology for crop improvement in the Middle East and the Mediterranean regions.

Main Activities Planned for 1995-96

D/16. There is no significant change in the amount of the regular budget resources allocated to this subprogramme. The FAO extrabudgetary resources include an allocation of $467 000 for agricultural applications of molecular biology. The number of TC projects in support of plant breeding and genetics will probably increase to approximately 75.

D/17. The main changes within this subprogramme are increased emphasis on the use of molecular biology to increase the efficiency of mutation breeding and on crops meeting the basic food needs of developing countries.

D/18. The principal objective is to strengthen the capability of national plant breeding institutes and universities to use nuclear and molecular biology techniques to create genetic variation and to select desired crop mutants suitable for low-input agriculture. The work is carried out through the development and transfer of technology and the provision of laboratory services.

D/19. The main activities will include the promotion of *in vitro* techniques to simplify mutation breeding of crop plants and accelerate conventional plant breeding cycles. The Agency's Laboratory in Seibersdorf will conduct research and development work and provide intensive training in advanced mutation techniques. Attention will be given to the improvement of root and tuber crops, basic cereals, forage feed and industrial crops. Emphasis will be placed on integrating molecular biology with mutation techniques to accelerate the development of new varieties suitable for sustainable agriculture. In due time (usually some 10-15 years) this work will result in the release to growers of improved varieties of crops.

D/20. There is a request for added resources in both 1995 and 1996 to fund additional high priority work (through a CRP) needed to improve potential and neglected food crops by the development of mutants with desired characteristics in neglected traditional, local plant crops and their introduction to farmers in rural areas as mutant varieties suitable for more sustainable food production.

Subprogramme D.3

Animal Production and Health

Main Accomplishments (1991-94)

D/21. Hormone radioimmunoassays and colorimetric methods for measuring nutritional metabolites were developed by the FAO/IAEA Animal Production Unit at the Agency's Laboratories at Seibersdorf and through CRPs and TC projects and transferred to animal production research institutes in developing countries in order to strengthen their ability to devise breeding and feeding strategies which improve the productivity of ruminant livestock. This approach not only led to substantial increases in the reproductive efficiency and growth rates of cattle, sheep, buffaloes and camelids, but also demonstrated the scope for improving meat and milk production using indigenous feeds and animal resources.

D/22. Cheap, sensitive and robust immunoassay test kits were developed for diagnosing most of the important diseases affecting livestock in tropical and subtropical countries, e.g. rinderpest, foot-and-mouth disease, trypanosomiasis and brucellosis. Through CRPs and TC projects these were validated and used for monitoring disease control or eradication programmes in developing Member States. Particularly important in this respect was the support provided to the Pan African Rinderpest Campaign, to foot-and-mouth disease eradication efforts in Latin America and to trypanosomiasis control in Africa.

D/23. The FAO/IAEA Animal Production Unit at Seibersdorf was designated as the FAO/IAEA Central Laboratory for ELISA and Molecular Techniques in Animal Disease Diagnosis and as an OIE Collaborating Centre. In addition to the provision of standardized disease diagnostic test kits, external quality assurance services were developed to ensure the reliability of the results obtained.

Main Activities Planned for 1995-96

D/24. The increase in the regular budget amounts shown for 1995 and 1996 is due to the redistributed Laboratory costs and does not reflect any planned increase in the level of effort within this subprogramme. TC commitments in this area will slightly increase to about 70 projects.

D/25. The main change in activities within this subprogramme is the replacement of diagnostic kit production work with activities related to the quality control of kits and the addition of further molecular tools to accomplish this work (DNA probes, monoclonal antibodies, PCR). The TC commitment will probably increase.

D/26. Three main areas (animal nutrition, reproduction and disease diagnosis) will continue to dominate and within each area emphasis will be given to the transfer of immunoassay methods (both RIA and ELISA) to developing Member States for the improvement of ruminant animal productivity and health. Activities in animal nutrition and reproduction will primarily support the use of these methods to measure the effectiveness of local crop residues and agroindustrial by-products as feed supplements and to improve artificial insemination programmes for dairy cattle, while in animal health the focus will be on improving the effectiveness of national and regional programmes to eradicate or control animal diseases (e.g. through vaccination, vector control or drug treatment).

D/27. Leading national laboratories in Latin America and Asia will assume the role of regional centres for the production and distribution of immunoassay reagents, and in both regions continuing efforts will be made to promote self-reliance with respect to training.

D/28. Through the FAO/IAEA Central Laboratory for ELISA and Molecular Techniques in Animal Disease Diagnosis recently established in Seibersdorf and the OIE Collaborating Centres, the reliability and sustainability of immunoassay methods will be improved by means of an expanded external quality assurance programme. Also, the Agency's collaboration with other international organizations (WHO, OIE) will be strengthened in order to support international standardization, validation and quality assurance of immunoassay kit reagents and protocols. The Central Laboratory will, however, continue to provide reagents to Member States not supplied from regional centres.

D/29. The implementation of the requested additional high priority activity would extend current efforts on animal production and health to non-ruminant animals (poultry, pigs and fish), with particular emphasis on improving nutrition, reproduction and disease control by means of immunoassay and molecular techniques.

Subprogramme D.4

Insect and Pest Control

Main Accomplishments (1991-94)

D/30. Veterinary/epidemiological surveys among livestock in the Libyan Arab Jamahariya have confirmed the eradication of the New World Screwworm from North Africa.

D/31. Basic quality control standards have been elaborated for different stages of tsetse mass-rearing. Methods for the routine long distance transport of tsetse pupae from a mass-rearing centre to field projects in Africa were developed.

D/32. Tests on the use of sexually sterile tsetse flies from a mass-rearing facility in tsetse control operations were pursued. The work covered the conventional administration of the sterile insect technique, the potential of a trans-taxon use of sterile tsetse for the control of very closely related species or subspecies, and the release and recapture of sterile virgin females for indirect entomological monitoring of a tsetse population.

D/33. By means of irradiation techniques, genetic sexing strains of the Mediterranean fruit fly were developed, transferred to the mass-rearing systems and tested in field experiments. One of these strains, Vienna-42, is based on a temperature sensitive lethal mutation and permits the elimination of female medflies as early as the egg stage. In addition to the obvious savings in larval diet through elimination of the necessity to feed female larvae, male-only releases provide operational advantages and prevent the reduction in fruit quality resulting from stings by released sterile females.

Main Activities Planned for 1995-96

D/34. Redistribution of the Seibersdorf Laboratory costs results in the apparent increase in resources for 1995 and 1996, but no change in regular budgeted activity is planned. The extrabudgetary resource support to this subprogramme is expected to remain at about current levels. A significant increase in TC effort in the area of insect and pest control is possible.

D/35. The control or eradication of fruit flies and tsetse flies is a major component of the programme. The control of Lepidopteran pests which attack major food crops will receive increased attention. Genetic engineering and molecular biology aspects will be strengthened.

D/36. A TC model project is proposed to bring about the eradication of the tsetse fly and thus the elimination of African animal trypanosomiasis from Zanzibar.

D/37. Research will be co-ordinated on the use of genetic and related molecular biology techniques in support of control programmes. The instruction of scientists in African countries in basic genetic and molecular biology techniques will be the first step towards the acquisition of information on tsetse populations relevant to future applied field work.

D/38. The requested additional high priority resources would be used to fund a CRP on the use of the SIT against mosquitoes that transmit malaria.

Subprogramme D.5

Agrochemicals and Residues

Main Accomplishments (1991-94)

D/39. Through CRPs and TC activities, support has been given to 24 developing countries in improving their ability to study and monitor the fate and behaviour of pesticides using radiotracer and related techniques. Important information that will help the authorities responsible for the control and use of pesticides has been obtained: the bioavailability of non-extractable pesticide residues in grain, the environmental acceptability of the economically viable insecticide DDT in the tropics and safe pesticide practices in rice-fish cultures. In addition, improved formulations of insecticides for use in tsetse control have been developed and field tested.

Main Activities Planned for 1995-96

D/40. The decreased amount of regular budget resources reflects redistribution of the Seibersdorf Laboratory costs and not a decrease in actual level of effort in this subprogramme. There will be an increase in the level of extrabudgetary resources in 1995-96. The TC commitment in this area is expected to increase to about 25 projects.

D/41. The main change in the subprogramme is the increase in emphasis on quality assurance in support of FAO efforts to regulate the distribution and use of pesticides.

D/42. Continuing emphasis will be placed on the promotion of nuclear methods, mainly through CRPs for: evaluating pesticide use practices and monitoring residues in food and the environment; and the development of improved pesticides formulations and novel immunochemical methods for the measurement of low residue levels. In addition, studies will be conducted on radionuclide transfer from air, soil and water to the food chain of man. The main products from these activities will be the production of pesticides less harmful to the environment as well as guidelines on agricultural countermeasures in the event of radiological accidents in tropical environments.

D/43. In the pesticide monitoring area, a new proposal will be considered in collaboration with FAO for the establishment of an international analytical quality assurance programme for pesticides at the Agency's Laboratories. This programme would provide quality assurance support for FAO, UNEP and WHO activities relating to control of the use of pesticides.

D/44. Additional resources are requested to assist the application of nuclear and related methods to study (by means of a CRP) the effects of agricultural pollution and of other pollutants on agriculture for the purpose of developing control strategies.

Subprogramme D.6

Food Preservation

Main Accomplishments (1991-94)

D/45. Work done through a CRP has helped to gain international recognition of irradiation as a quarantine treatment of fresh fruits and vegetables.

D/46. A resolution on the Practical Utilization of Food Irradiation in Developing Countries was adopted by the General Conference in 1992. It requested the Director General to prepare, in consultation with FAO and WHO, a detailed project proposal for introducing the practical utilization of food irradiation in developing countries. The Board of Governors at its June 1993 session approved the proposal. Detailed feasibility studies to introduce the commercial scale application of food irradiation were conducted in China, Mexico and Morocco.

D/47. Technology transfer and the applications of food irradiation were intensified through the Asian Regional Co-operative Project on Food Irradiation, funded by UNDP from 1989 to 1993. Some 20 commercial demonstration irradiators for processing food are already available in 12 countries in the region. Relevant regulations have been introduced in 11 countries. As a result, 5 countries in the RCA region have already commercialized a number of irradiated foods.

D/48. The membership of the International Consultative Group on Food Irradiation (ICGFI) grew from 37 in 1991 to 39 in 1993. A number of documents related to the control of food irradiation were published. The ICGFI mandate is being extended until 1999.

Main Activities Planned for 1995-96

D/49. The major activity change in this subprogramme is the increased emphasis on implementing commercial food irradiation in developing countries and in helping to change consumer attitudes towards accepting the irradiation process.

D/50. Emphasis will be placed on assisting developing countries to acquire appropriate infrastructures and to introduce commercial scale application of food irradiation. Research will cover areas which could help expand the scope of food irradiation, with emphasis on combination treatments involving irradiation, shelf-stable products and pilot scale experiments on the use of irradiation as a public health intervention measure to control *Cysticercosis/taeniasia* and *Vibrio* infection in Latin America and the Caribbean (in collaboration with PAHO). The wholesomeness of food irradiated with doses above 10 kGy will be evaluated.

D/51. Through ICGFI, work will be done on disseminating information to governments, the food industry and trade and consumer organizations to facilitate wider acceptance of the technology and on developing a harmonized system for the control of irradiated food in the trade. Training of operators of irradiation facilities and food inspectors will be strengthened.

D/52. A request for added resources to fund an additional high priority project and to strengthen other increasing activities is made in this subprogramme. The project would assist Member States in using irradiation to conform with new sanitary and phytosanitary measures being negotiated through the General Agreement on Tariffs and Trade (GATT) and support additional activities resulting from the GC(XXXVII)/RES/616 as well as increasing activities foreseen under ICGFI.

PROGRAMME E: HUMAN HEALTH

E/1. The programme is directed towards the improvement of human health care and the enhancement of medical research in developing countries through the application of nuclear techniques, which are gaining significance owing to their efficiency in prevention, early diagnosis, prognosis and treatment of diseases, as well as in solving health problems caused by pollution or lack of nutrients. Special attention is given to enhancing the quality and effectiveness of new and existing nuclear medicine and radiation therapy facilities and to reducing their operating costs by strengthening indigenous skills and capabilities at all levels, through new teaching approaches to complement training courses, and by promoting quality assurance of entire processes. Additionally, the Agency will play a role in promoting in developing Member States the newly emerging medical nuclear technologies.

E/2. The areas of high priority will be the establishment and upgrading of facilities along with indigenous capabilities for the development and implementation of suitable protocols for curative radiotherapy of cancers with an enhanced cure rate. The Agency will co-operate and consult closely with the WHO and PAHO, especially in identifying those countries and facilities where assistance will have the greatest impact. Diagnostic applications will be focused on communicable diseases, malnutrition and cancer, as well as on cardiovascular and brain diseases. A new initiative will be the application of advances in molecular medicine in the detection of important hereditary diseases whose prevalence is still unknown in developing countries. Therapeutic applications will be centred on the treatment of cancer and on palliation of pain in cancer patients but will also cover benign diseases where other treatment modalities have been shown to be less effective.

E/3. The main emphasis in dosimetry will be on radiation therapy and radiation processing (high dose), mainly in developing countries. The IAEA/WHO Network of Secondary Dosimetry Laboratories will continue to provide calibration and other services according to the needs of Member States, i.e. from high dose applications, through radiotherapy and radiation protection, to environmental protection dosimetry.

E/4. The nutritional and health related studies are concerned with helping institutes (particularly in developing countries) to apply nuclear and complementary techniques. Emphasis is placed on the practical application of nuclear techniques to problems that are prevalent in developing countries or that are amenable to study by comparative assessment of differences between countries. Guidance on the selection of priority problem areas is obtained partly from other United Nations organizations such as WHO and UNEP.

E/5. The attainment of many of the goals set by the International Conference on Nutrition (FAO/WHO, 1992) can be assisted substantially by the use of nuclear and isotopic techniques, particularly in the areas of micronutrient and protein energy malnutrition. Similarly, some of the targets set by the United Nations Conference on Environment and Development (UNCED) can be met through the use of nuclear analytical techniques, particularly in measuring non-radioactive pollutants and in harmonizing environmental measurements. The Agency's programme will help to facilitate the achievement of these goals.

E/6. Those activities of the IAEA-MEL which are related to non-radioactive marine pollutants will continue to be co-ordinated under this programme. The provision of technical support to

international programmes for monitoring aquatic pollution will continue within the framework of the 1992 tripartite agreement with UNEP and UNESCO, the Agency's TC programme and the AQCS programme. Emphasis will be placed on AQCS, training, method development, the provision of technical expertise and the use of isotopic and nuclear techniques to elucidate pollutant fate and impact. The proposed budget shows a decrease in regular and an increase in extrabudgetary resources following recent realignment of cost sharing to reflect more fairly the work distribution within the respective mandates of the partner Agencies and programmes.

PROGRAMME E: HUMAN HEALTH
Summary of Regular Budget estimates by subprogramme
Table 22

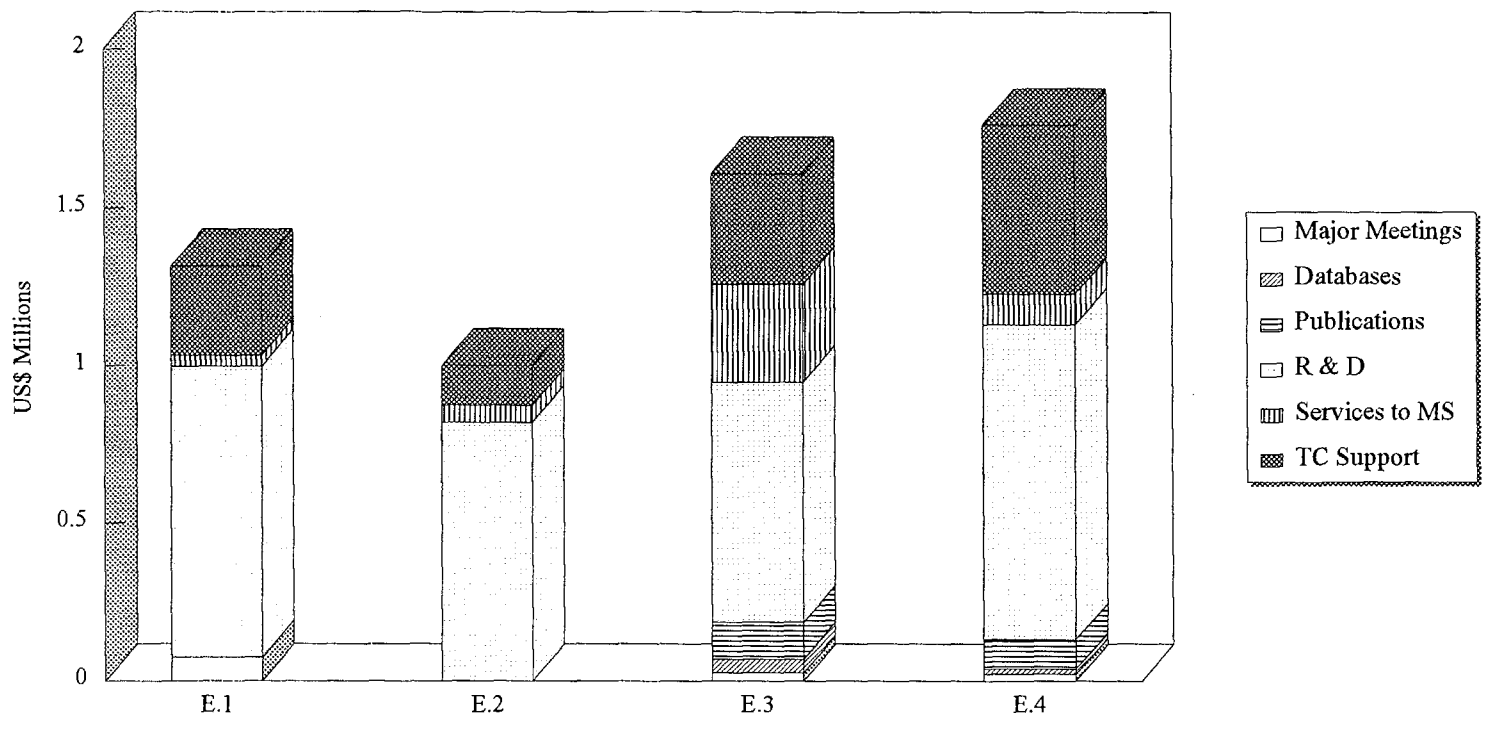
	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
E.1	Nuclear Medicine	RIHU	1 345 000	(90 000)	(6.7)	1 255 000	(29 000)	(2.3)	1 226 000	4.8	1 315 000	4.1	1 339 000
	Additional high-priority activities		–	116 000	–	116 000	(11 000)	(9.5)	105 000	4.8	122 000	4.1	115 000
E.2	Applied Radiation Biology and Radiotherapy	RIHU	755 000	198 000	26.2	953 000	(30 000)	(3.1)	923 000	4.9	1 000 000	3.9	1 006 000
E.3	Dosimetry	RIHU/ RIAL	1 528 000	(2 000)	(0.1)	1 526 000	–	–	1 526 000	5.3	1 607 000	4.1	1 673 000
E.4	Nutritional and Health-related Environmental Studies	RIHU/ RIAL	1 308 000	(1 000)	(0.1)	1 307 000	30 000	2.3	1 337 000	4.7	1 369 000	4.3	1 460 000
		RIML	467 000	(88 000)	(18.8)	379 000	–	–	379 000	3.4	392 000	3.1	404 000
	Additional high-priority activities		–	448 000	–	448 000	74 000	16.5	522 000	4.7	469 000	4.3	571 000
Programme E – Human Health			5 403 000	17 000	0.3	5 420 000	(29 000)	(0.5)	5 391 000	4.9	5 683 000	4.1	5 882 000
Additional high-priority activities			–	564 000	–	564 000	63 000	11.2	627 000	4.8	591 000	4.4	686 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME E: HUMAN HEALTH

Output by Subprogramme - 1995

Graph 5



PROGRAMME E: HUMAN HEALTH
Summary of Regular Budget Estimates by Project
Table 23

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
E.1.	Nuclear Medicine													
E.1.01	Development of Indigenous Capability to Conduct Screening Programmes for Hepatitis B in Developing Countries (Completed)	1994	RIHU	121 000	(121 000)	(100.0)	–	–	–	–	–	–	–	–
E.1.01	Development of Indigenous Capability of Reagent Production for Radioimmunoassay (RIA) of Analytes of Clinical Importance (New)	2000	RIHU	–	174 000	–	174 000	(22 000)	(12.6)	152 000	4.8	183 000	4.1	167 000
E.1.02	Therapeutic Applications of Unsealed Radioactive Sources	2000	RIHU	118 000	104 000	88.1	222 000	52 000	23.4	274 000	4.8	233 000	4.1	300 000
E.1.03	Enhancing the Capabilities of Developing Countries to Perform Dynamic Functional Studies	1996	RIHU	298 000	(30 000)	(10.1)	268 000	(139 000)	(51.9)	129 000	4.8	280 000	4.1	143 000
E.1.04	Screening for Neonatal Hypothyroidism (Old)		RIHU	204 000	(204 000)	(100.0)	–	–	–	–	–	–	–	–
E.1.04	In Vivo Diagnosis of Infection and Inflammation Using Nuclear Techniques (New)	2000	RIHU	–	–	–	–	99 000	–	99 000	4.8	–	4.1	108 000
E.1.05	Diagnosis of Communicable and Hereditary Diseases Using Radionuclide Based Techniques	Cont.	RIHU	382 000	8 000	2.1	390 000	(29 000)	(7.4)	361 000	4.8	408 000	4.1	393 000
	Additional high-priority activities			–	42 000	–	42 000	(7 000)	(16.7)	35 000	4.8	44 000	4.1	39 000
E.1.06	Nuclear Techniques in the Early Diagnosis of Cancer	Cont.	RIHU	222 000	(21 000)	(9.5)	201 000	10 000	5.0	211 000	4.8	211 000	4.1	228 000
	Additional high-priority activities			–	74 000	–	74 000	(4 000)	(5.4)	70 000	4.8	78 000	4.1	76 000
	Sub-total E.1.			1 345 000	(90 000)	(6.7)	1 255 000	(29 000)	(2.3)	1 226 000	4.8	1 315 000	4.1	1 339 000
	Additional high-priority activities			–	116 000	–	116 000	(11 000)	(9.5)	105 000	4.8	122 000	4.1	115 000

PROGRAMME E: HUMAN HEALTH
Summary of Regular Budget Estimates by Project
Table 23 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
E.2.	Applied Radiation Biology and Radiotherapy													
E.2.01	Radiation Sterilization of Medical Supplies	1998	RIHU	168 000	(96 000)	(57.1)	72 000	–	–	72 000	4.9	76 000	3.9	79 000
E.2.03	Advanced Techniques in Brachytherapy	1996	RIHU	163 000	(71 000)	(43.6)	92 000	25 000	27.2	117 000	4.9	97 000	3.9	128 000
E.2.04	Comparative Assessment of Mutagenic and Carcinogenic Effects of Low-level Radiation and Toxic Chemicals Released from Energy Cycles	1998	RIHU	126 000	(16 000)	(12.7)	110 000	4 000	3.6	114 000	4.9	116 000	3.9	125 000
E.2.05	Exploration of the Stimulative Effects of Low-dose Radiation (Completed)	1996	RIHU	161 000	(161 000)	(100.0)	–	–	–	–	–	–	–	–
E 2.06	Development of Criteria for Tumor Responsiveness to Radiation for Use in Treatment Planning	1997	RIHU	137 000	(41 000)	(29.9)	96 000	22 000	22.9	118 000	4.9	101 000	3.9	130 000
E.2.07	Quality Assurance in Clinical Radiotherapy (New)	1997	RIHU	–	99 000	–	99 000	(2 000)	(2.0)	97 000	4.9	104 000	3.9	106 000
E.2.08	Combined Radiation Therapy of Cancer (New)	1999	RIHU	–	217 000	–	217 000	(79 000)	(36.4)	138 000	4.9	228 000	3.9	151 000
E.2.09	Co-ordinated Implementation of Suitable Radiotherapy for Improved Cancer Cure in Developing Countries	2000	RIHU	–	267 000	–	267 000	–	–	267 000	4.9	278 000	3.9	287 000
	Sub – total E.2.			755 000	198 000	26.2	953 000	(30 000)	(3.1)	923 000	4.9	1 000 000	3.9	1 006 000

PROGRAMME E: HUMAN HEALTH
Summary of Regular Budget Estimates by Project
Table 23 (Contd.)

Project Codes		Project Durat	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
E.3.	Dosimetry													
E.3.01	Secondary Standards Dosimetry Laboratory (SSDL) Network	Cont.	RIHU RIAL	444 000	98 000	22.1	542 000	29 000	5.4	571 000	5.3	571 000	4.1	626 000
E.3.02	Dose Intercomparison and Assurance	Cont.	RIHU RIAL	624 000	(64 000)	(10.3)	560 000	(45 000)	(8.0)	515 000	5.3	590 000	4.1	564 000
E.3.03	Transfer of Dosimetry Techniques	Cont.	RIHU	386 000	(9 000)	(2.3)	377 000	(4 000)	(1.1)	373 000	5.3	397 000	4.1	409 000
E.3.GA	General Activities	Cont.	RIHU	74 000	(27 000)	(36.5)	47 000	20 000	42.6	67 000	5.3	49 000	4.1	74 000
	Sub – total E.3.			1 528 000	(2 000)	(0.1)	1 526 000	–	–	1 526 000	5.3	1 607 000	4.1	1 673 000
E.4.	Nutritional and Health–related Environmental Studies													
E.4.01	Applied Human Nutrition Research Using Nuclear and Isotopic Techniques	Cont.	RIHU RIAL	338 000	137 000	40.5	475 000	(23 000)	(4.8)	452 000	4.7	498 000	4.3	494 000
E.4.02	Applied Research on Environ–mental Pollution Using Nuclear and Isotopic Techniques	Cont.	RIHU RIAL	766 000	(162 000)	(21.2)	604 000	42 000	7.0	646 000	4.7	632 000	4.3	705 000
E.4.03	Technical Support to International Programmes for Monitoring the Aquatic Environment	Cont.	RIML	467 000	(88 000)	(18.8)	379 000	–	–	379 000	3.4	392 000	3.1	404 000
E 4.04	Monitoring of Accidentally Released Radionuclides in the Environment and in Food	1998	RIHU RIAL	204 000	24 000	11 8	228 000	11 000	4.8	239 000	4.7	239 000	4.3	261 000
E.4	Additional high–priority activities Harmonization of Health–related Environmental Measurements Using Nuclear Analytical Techniques			–	448 000	–	448 000	74 000	16.5	522 000	4.7	469 000	4.3	571 000
			RIHU/ RIAL	1 308 000	(1 000)	(0.1)	1 307 000	30 000	2.3	1 337 000	4.7	1 369 000	4.3	1 460 000
			RIML	467 000	(88 000)	(18.8)	379 000	–	–	379 000	3.4	392 000	3.1	404 000
	Sub – total E.4.			1 775 000	(89 000)	(5.0)	1 686 000	30 000	1.8	1 716 000	4.5	1 761 000	4.0	1 864 000
	Additional high–priority activities			–	448 000	–	448 000	74 000	16.5	522 000	4.7	469 000	4.3	571 000
Programme E – Human Health				5 403 000	17 000	0.3	5 420 000	(29 000)	(0.5)	5 391 000	4.9	5 683 000	4.1	5 882 000
	Additional high–priority activities			–	564 000	–	564 000	63 000	11.2	627 000	4.8	591 000	4.4	686 000

PROGRAMME E: HUMAN HEALTH
List of projects and estimated total resources for 1995 and 1996
Table 24

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a_/	Estimated Total Resources for 1995 TACF b_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a_/	Estimated Total Resources for 1996 TACF b_/
E.1.	Nuclear Medicine										
E.1.01	Development of Indigenous Capability of Reagent Production for Radioimmunoassay (RIA) of Analytes of Clinical Importance (New project)	2000	RIHU	0.7	0.4	183 000	–	190 000	167 000	–	190 000
E.1.02	Therapeutic Applications of Unsealed Radioactive Sources	2000	RIHU	1.2	0.5	233 000	48 000	228 000	300 000	48 000	228 000
E.1.03	Enhancing the Capabilities of Developing Countries to Perform Dynamic Functional Studies	1996	RIHU	0.7	0.3	280 000	–	912 000	143 000	–	912 000
E.1.04	In Vivo Diagnosis of Infection and Inflammation Using Nuclear Techniques (New project)	2000	RIHU	c_/	c_/	–	–	430 000	108 000	–	430 000
E.1.05	Diagnosis of Communicable and Hereditary Diseases Using Radionuclide Based Techniques	Cont	RIHU	1.1	0.5	408 000	15 000	341 000	393 000	–	341 000
	Additional high-priority activities			–	–	44 000	–	–	39 000	–	–
E 1.06	Nuclear Techniques in the Early Diagnosis of Cancer	Cont.	RIHU	0.6	0.3	211 000	–	430 000	228 000	–	430 000
	Additional high-priority activities			–	–	78 000	–	–	76 000	–	–
	Sub-total E.1.			4.3	2.0	1 315 000	63 000	2 531 000	1 339 000	48 000	2 531 000
	Additional high-priority activities			–	–	122 000	–	–	115 000	–	–
E.2.	Applied Radiation Biology and Radiotherapy										
E2.01	Radiation Sterilization of Medical Supplies	1998	RIHU	0.4	0.4	76 000	–	798 000	79 000	–	798 000
E.2.03	Advanced Techniques in Brachytherapy	1996	RIHU	0.4	0.3	97 000	–	300 000	128 000	–	300 000
E.2.04	Comparative Assessment of Mutagenic and Carcinogenic Effects of Low-level Radiation and Toxic Chemicals Released from Energy Cycles	1998	RIHU	0.5	0.3	116 000	–	100 000	125 000	–	100 000

PROGRAMME E: HUMAN HEALTH
List of projects and estimated total resources for 1995 and 1996
Table 24 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a_/	Estimated Total Resources for 1995 TACF b_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a_/	Estimated Total Resources for 1996 TACF b_/
E.2.06	Development of Criteria for Tumor Responsiveness to Radiation for Use in Treatment Planning	1997	RIHU	0.4	0.3	101 000	–	443 000	130 000	–	443 000
E.2.07	Quality Assurance in Clinical Radiotherapy (New project)	1997	RIHU	0.5	0.2	104 000	–	–	106 000	–	–
E.2.08	Combined Radiation Therapy of Cancer (New project)	1999	RIHU	0.5	0.3	228 000	–	941 000	151 000	–	941 000
E.2.09	Co-ordinated Implementation of Suitable Radiotherapy for Improved Cancer Cure in Developing Countries (New project)	2000	RIHU	0.4	0.3	278 000	–	254 000	287 000	–	254 000
	Sub – total E.2.			3.1	2.1	1 000 000	–	2 836 000	1 006 000	–	2 836 000
E.3	Dosimetry										
E.3.01	Secondary Standards Dosimetry Laboratory (SSDL) Network	Cont.	RIHU RIAL	1.9 0.2	1.6 1.1	571 000	–	337 000	626 000	–	337 000
E.3.02	Dose Intercomparison and Assurance	Cont.	RIHU RIAL	1.8 0.2	2.0 1.2	590 000	–	30 000	564 000	–	30 000
E.3.03	Transfer of Dosimetry Techniques	Cont.	RIHU	1.4	0.6	397 000	–	30 000	409 000	–	30 000
E.3.GA	General Activities	Cont.	RIHU	0.2	0.1	49 000	–	–	74 000	–	–
			RIHU RIAL	5.3 0.4	4.3 2.3						
	Sub – total E.3.			5.7	6.6	1 607 000	–	397 000	1 673 000	–	397 000
E.4.	Nutritional and Health-related Environmental Studies										
E.4.01	Applied Human Nutrition Research Using Nuclear and Isotopic Techniques	Cont	RIHU RIAL	1.0 0.1	1.0 0.2	498 000	–	220 000	494 000	–	260 000
E.4.02	Applied Research on Environmental Pollution Using Nuclear and Isotopic Techniques	Cont	RIHU RIAL	1.1 1.1	1.1 3.4	632 000	–	290 000	705 000	–	190 000
E.4.03	Technical Support to International Programmes for Monitoring the Aquatic Environment	Cont	RIML	0.9	2.8	392 000	1 760 000	–	404 000	1 800 000	–
E.4.04	Monitoring of Accidentally Released Radionuclides in the Environment and in Food	1998	RIHU RIAL	0.1 0.7	0.1 2.2	239 000	–	63 000	261 000	–	123 000
E.4	Additional high-priority activities Harmonization of Health-related Environmental Measurements Using Nuclear Analytical Techniques			1.0	1.0	469 000	–	–	571 000	–	–
			RIHU RIAL RIML	2.2 1.9 0.9	2.2 5.8 2.8	1 369 000 392 000	– 1 760 000	573 000 –	1 460 000 404 000	– 1 800 000	573 000 –
	Sub – total E.4			5.0	10.8	1 761 000	1 760 000	573 000	1 864 000	1 800 000	573 000
	Additional high-priority activities			1.0	1.0	469 000	–	–	571 000	–	–
Programme E – Human Health				18.1	21 5	5 683 000	1 823 000	6 337 000	5 882 000	1 848 000	6 337 000
	Additional high-priority activities			1.0	1.0	591 000	–	–	686 000	–	–

a_/ Includes funds from other UN organizations.
b_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
c_/ The staffing for projects starting in 1996 is not shown
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme E.1

Nuclear Medicine

Main Accomplishments (1991-94)

E/7. The capabilities of medical institutions and hospitals in developing Member States in the field of nuclear medicine have been strengthened as a result of the Agency's TC activities, CRPs, regional and interregional training courses, meetings and publications. Particular attention has been paid to the programme for the least developed countries in the Africa region.

E/8. The local capability to perform in vitro assays of thyroid related hormones, to produce bulk reagents for these assays and to maintain high quality results through external quality assurance scheme has been consolidated and strengthened in the Asia and the Pacific and Latin American regions. A similar capability is being established for hepatitis B diagnosis with a view to undertaking screening programmes in high risk groups such as pregnant mothers and recipients of blood from blood banks.

E/9. The ability to perform dynamic functional studies has been increased by the provision of gamma camera computer system, the establishment of in-house preparation of radiopharmaceuticals and the maintenance of established quality control programmes. The development of personal computer based data acquisition and clinical application software, which has been achieved through technical contracts, has helped reduce the initial investment cost of nuclear medicine centres in developing countries. An atlas has been published on lung imaging, with particular reference to the radioaerosol inhalation technique based on an indigenously developed aerosol delivery system. Recent advances in cancer diagnosis have been introduced into Member States; this programme started in respect to colorectal cancer and will be followed with cancer of other organs.

E/10. For the first time, therapeutic applications of radionuclides for the treatment of diseases have been initiated; examples include ^{131}I treatment in thyrotoxic patients and the use of ^{32}P and ^{89}Sr for palliation of bone pain in patients with cancer metastases.

E/11. In vitro assays using DNA amplification and radiolabelled DNA probes have been introduced as early and reliable diagnostic tools for communicable diseases such as malaria, tuberculosis and Chagas disease. Steps towards self-reliance in this area have been initiated in the Latin America region.

Main Activities Planned for 1995-96

E/12. The regular budget resource decrease in 1995-96 for this subprogramme is due primarily to the completion of the work on the development of a capability to conduct screening programmes for hepatitis B in developing countries. In 1995 and 1996 some extrabudgetary resources are anticipated. The TC effort is expected to increase slightly and will include over 20 projects.

E/13. The projected tasks under this subprogramme focus on the necessary upgrading of the health care capabilities and skills in developing countries involving relevant nuclear techniques

and technologies, and in particular therapeutic cancer control. The developing populations are confronted with cancers which are major contributors to morbidity and mortality. In contrast to technologically advanced countries, however, a gross lack of indigenous skills and capabilities for radiotherapeutic cancer control in the developing countries aggravates the health sector problems. This has triggered a renewed emphasis on cancer therapy in 1995-96, including high priority support for co-ordinated implementation of suitable radiotherapy using unsealed radioactive sources for improved cancer cure.

E/14. The training of nuclear medicine specialists and technologists, tasks aimed at reducing the cost of nuclear medicine equipment and reagents, and activities to promote the culture of preventive maintenance and quality control of advanced nuclear medical equipment will receive particular attention. A close symbiotic association with WHO and PAHO, national and regional medical authorities and societies and commercial firms will be co-ordinated to reach all end-users of nuclear medicine techniques in developing countries through multimedia based distance techniques.

E/15. Diagnostic applications will be focused mainly on communicable diseases, cancer and cardiovascular diseases. New advances in molecular nuclear medicine will be applied to the detection of hereditary diseases and inborn errors of metabolism. The scope of therapeutic applications is widened by including more diseases for which other methods of treatment have shown comparatively less efficacy than the administration of radionuclides for curative purposes or as a palliative of distressing manifestations such as pain.

E/16. Improvements in the quality of cost effective health care in developing Member States will be promoted by helping to ensure quality in the diagnosis and treatment of important diseases which have been recognized by the WHO as the leading causes of morbidity and mortality.

E/17. Support is being requested for two additional high priority activities in 1995-96. Each is an expansion of ongoing work and would be performed through CRPs. One deals with investigation of radionuclide based rapid tests for drug resistant malaria and the other the use of immunoscintigraphic methods for the diagnosis and post-therapy monitoring of ovarian cancer.

Subprogramme E.2

Applied Radiation Biology and Radiotherapy

Main accomplishments (1991-94)

E/18. Through CRPs and TC projects, the Agency has assisted 16 developing countries in Africa and Latin America in introducing radiation sterilization of local medical supplies and pharmaceuticals. A further 12 countries in the Asia and Pacific region have been given assistance in the radiation sterilization of tissue grafts and in establishing tissue banks.

E/19. Through a CRP organized in conjunction with the radiological safety programme, assistance has been provided to 12 Member States in the development of quantitative assessment

criteria for radiobiological effects, including carcinogenicity, of exposures to hot beta particles presumed to have been released in the Chernobyl reactor accident fallout. The final results were reviewed at a research co-ordination meeting in September 1993 and will be published as an IAEA-TECDOC.

E/20. Assistance was given to some 30 developing countries in Africa, Latin America and Asia and the Pacific in strengthening indigenous capabilities in the radiotherapeutic control and management of cancer. In Egypt, an advanced institution and 15 hospitals have combined to establish an African regional centre for the ^{137}Cs brachytherapy of cancer of the uterine cervix, and have provided training for nationals of other developing countries in the region.

E/21. Through two recently concluded CRPs the use of inexpensive personal computer based systems for treatment planning and dosimetry in radiotherapy has been introduced. This is of special significance for developing countries in improving manual treatment planning and dosimetry with consequent upgrading of the quality of radiotherapy. Continued emphasis has been placed on improving radiotherapy facilities in developing countries through TC projects, especially in Africa and Latin America. Of special significance is the introduction of a new project aimed at the transfer of radiation technology from one developing country to another through the manufacture of simple, robust but safe ^{60}Co teletherapy machines in Egypt.

E/22. Results confirming the existence of an adaptive response to low dose radiation are being obtained through a CRP. The findings may have an impact on the interpretation of low dose radiobiological effects.

E/23. Data on tumour radiation response are being generated and validated through a CRP. The information obtained will help select a set of techniques with predictive value in respect of the individual radiosensitivity of human tumours. The use of these techniques in addition to the established clinical predictors of tumour radioresponse will refine the accuracy of existing prognostic equations and should assist in the development of superior clinical strategies in cancer management.

Main Activities Planned for 1995-96

E/24. The increase in regular budget resources in 1995 and 1996 is mainly due to the initiation of a new project in recognition of the urgent need in the developing countries for early implementation of suitable cancer radiotherapy management protocols and support equipment infrastructure to help provide sustainable health care with improved cancer cure rates. For acceleration of the objectives, a co-ordinated clinical trial based on interfacing of cancer radiotherapy centres and specialists from developed and developing countries is anticipated. An increase in the expected amount of extrabudgetary resources to support this subprogramme is anticipated. TC projects in this area will remain comparable with the 1994 level, at about 30 projects.

E/25. The activities in this subprogramme relate primarily to an attempt to broaden indigenous skills and capabilities in developing countries. Attention will focus on assisting radiotherapy facilities in these countries to contribute effectively to cancer treatment, in particular through the introduction of brachytherapy. The main topics will be advanced brachytherapy techniques and computer assisted radiotherapy planning for common cancer types such as cancer of the cervix and the head and neck. A continuing CRP will assist in the development of radiobiological

criteria for determining the responsiveness of specific tumours to radiation. These activities should provide valuable clinical guidance to radiotherapy centres in developing countries on the optimal choice of treatment mode and on accurate treatment planning.

E/26. With the gradual increase in radiotherapy facilities in developing countries, considerable attention will be placed on ensuring quality assurance in routine clinical radiotherapy practice. In this regard, training courses and CRPs are planned, especially in Africa and Latin America. A CRP on modern brachytherapy techniques with special reference to the developing countries will continue, with the aim of improving the clinical skills and competence of radiotherapists.

E/27. Another important aspect is the enhancement of radiation induced therapeutic gain in cancer therapy by the application of cytostatics and radiosensitizers in combination with radiation. This work is designed to increase awareness, develop indigenous skills and encourage a wider use of the multimodal approach in oncological practice, particularly in developing countries, to provide an avenue for international collaborative clinical studies on combined cancer radiotherapy with statistical assessment of the results.

E/28. Interest is growing in the recent molecular radiobiology techniques and criteria related to health safety in the development and use of energy technologies. Assessing the potential health impacts of toxic chemical pollutants released from conventional energy sources and industry using radiobiology models would allow these impacts to be compared with the corresponding health effects of low level radiation on the basis of well established guidelines for risk assessment, risk reduction and safety in the use of nuclear technology. Through a CRP it is planned to adopt molecular radiobiology techniques for the dose-response quantification of carcinogenicity by chemical pollutants from conventional technologies and implement health safety in their utilization.

E/29. After the successful introduction, through technical assistance, of radiation sterilization techniques for clinical quality tissue grafts, particularly in the countries of Asia and the Pacific region, efforts will be made to harmonize optimal tissue sterilization protocols to be adopted as standard by all countries in the region, with adherence to a total quality assurance system. Distance learning techniques will be used to assist in early manpower build-up.

Subprogramme E.3

Dosimetry

Main Accomplishments (1991-94)

E/30. Support to the IAEA/WHO Network of Secondary Standard Dosimetry Laboratories (SSDLs) has been intensified. The calibration service for secondary standard dosimeters provided for SSDLs is increasingly utilized by developing countries. The quality of the work by the SSDLs is now checked through an annual thermoluminescence dosimetry (TLD) service, and in special cases with ionization chamber intercomparisons. The proper use of dosimeters at radiotherapy centres is checked through the IAEA/WHO postal dosimetry service. This now covers about 1000 radiation therapy units, mainly in developing countries. The TLD services have been extended to check the dosimetry for photon beams of medical accelerators in addition

to ^{60}Co radiation therapy units. A quality assurance programme was set up for radiotherapy dosimetry to help improve radiation treatment.

E/31. The Agency took over the full technical activities of the International Dose Assurance Service (IDAS) for radiation processing facilities. The calibration and evaluation of dosimeters used for IDAS are performed by the Dosimetry Laboratory at Seibersdorf.

Main Activities Planned for 1995-96

E/32. No significant change in the level of resources in this subprogramme is forecast for 1995 and 1996. The number of TC projects will be about the same as in 1994.

E/33. The support of the IAEA/WHO network of SSDLs in Member States will continue, providing dose intercomparison services and extending their activities to quality assurance in radiotherapy.

E/34. The IAEA/WHO postal dosimetry service will be extended to include a greater number of radiotherapy centres using the SSDL facilities to check the dosimetry applied for radiation therapy.

E/35. The transfer of dosimetry techniques will be continued in order to assist in establishing and upgrading radiotherapy facilities and to provide training in developing countries.

E/36. The International Dose Assurance Service (IDAS) will be improved by organizing intercomparisons with advanced laboratories in high dose dosimetry.

Subprogramme E.4

Nutritional and Health-related Environmental Studies

Main Accomplishments (1991-94)

E/37. The Agency made a significant contribution to the report of the WHO/FAO/IAEA Expert Consultation on Trace Elements in Human Nutrition by providing data from a CRP as well as from an Agency database. Similar work is now continuing under a regional CRP on Asian reference man. An expansion of the work on protein energy metabolism has been facilitated by the provision of a cost-free expert. Advanced research is now being conducted on the impact of infection on protein requirements, particularly in the most vulnerable group — malnourished children. An assessment of the nutritional status of persons living in those regions of the former Soviet Union most affected by the Chernobyl accident was carried out as part of the International Chernobyl Project.

E/38. In environmental studies, several new analytical reference materials, including the only ones available containing fallout radioactivity in natural matrices, were developed at the Agency's Laboratories at Seibersdorf. Activities relating to non-radioactive inorganic pollution have focused on solid wastes and airborne particulate matter; several guidebooks have been published

on the use of nuclear analytical techniques for the study of such matrices. An expansion of the Agency's work in this area has taken place within the framework of the Joint UNDP/RCA/IAEA Project on the Use of Isotopes and Radiation to Strengthen Technology and Support Environmentally Sustainable Development: Sub-Project on Nuclear Analytical Techniques. In addition, a database on biological and environmental reference materials for trace elements, nuclides and organic microcontaminants has been updated and expanded in a collaborative project with UNEP.

E/39. The programme for providing technical support to international marine pollution monitoring programmes was implemented by the IAEA Marine Environment Laboratory (IAEA-MEL) under the new tripartite agreement with UNEP and the IOC of UNESCO. Over 80 Member States participated in the Laboratory's quality assurance programme, which included intercomparison exercises, some 30 specialist training courses, the development and production of UNEP/IAEA/IOC Reference Methods for Marine Pollution Studies (over 60 volumes currently in print) and the provision of instrument maintenance services to developing countries. The Laboratory also conducted pilot monitoring exercises and participated as an analytical centre for international and global contaminant assessment experiments such as the International Mussel Watch. Staff from the Laboratory played an active role in the development of new regional programmes for pollution assessment and control, particularly in the Black Sea and in Latin America and in the development of strategies for the oceans and coastal environment approved by UNCED. They also conducted co-operative studies on new forms of chemical contamination employing nuclear and non-nuclear techniques, in particular the use of radiotracer techniques to study pesticide behaviour in the tropical marine environment. A detailed study of nuclear and non-nuclear pollution in the Danube River was conducted.

Main Activities Planned for 1995-96

E/40. The decrease in the amount of regular budget resources allocated to this subprogramme is due to a shift in the work of the IAEA-MEL from monitoring the aquatic environment (in this subprogramme) to the monitoring of marine radioactivity (in subprogramme C.4). The expected amount of extrabudgetary resources to be provided to support work in this subprogramme will remain at approximately the same level as in 1994. The number of TC projects will stay at about 25 per year.

E/41. There are no significant changes in emphasis within the subprogramme. However, a strengthening and consolidation of some of the activities is foreseen in accordance with new priorities defined by WHO, UNEP and other responsible United Nations organizations and assisted partly by extrabudgetary resources.

E/42. The main emphasis will be on assisting analytical laboratories — many of them operating within nuclear research establishments — in enhancing their ability to use nuclear techniques in the monitoring and assessment of health related environmental pollution. In the context of strengthening technology to support environmentally sustainable development, it is planned — mainly through CRPs — to assess and demonstrate the use of various nuclear and isotopic techniques in studies of non-radioactive environmental pollution. Guidelines will be published on various aspects of the applications of the above techniques and analytical reference material services will be provided. The performance of participating institutes will be quantified and monitored by external quality control services.

E/43. One of the main projects to be undertaken concerns the use of nuclear analytical techniques to assist in the harmonization of health related environmental measurements. These activities will help to meet the goals of UNCED Agenda 21 as well as newly emerging quality management and quality assurance standards (e.g. ISO-9000).

E/44. Support is also being provided to the Joint UNDP/RCA/IAEA Project on the Use of Isotopes and Radiation to Strengthen Technology and Support Environmentally Sustainable Development: Sub-Project on Nuclear Analytical Techniques.

E/45. With regard to nuclear and isotopic techniques in human nutrition research, the Agency's programmes are designed to help meet the goals set by the International Conference on Nutrition (FAO/WHO). These techniques are particularly useful in research on micronutrient and protein energy malnutrition — conditions which affect hundreds of millions of people, mainly in developing countries. The Agency's programme will focus on studies of the impact of infection on protein requirements, particularly in malnourished children. Studies will also be conducted on maternal and child nutrition, with special reference to the problem of growth retardation in children. Research on micronutrients will focus on two micronutrients that have been identified by WHO and FAO as having a major public health impact — iron and vitamin A.

E/46. Work started after the Chernobyl accident to develop guidelines and quality control procedures for monitoring the presence of accidentally released radionuclides in the environment and in food will continue. Emphasis will be placed on building up a network of experienced laboratories and thereby enhancing the preparedness of the Agency and its Member States to respond to emergency situations requiring a prompt and harmonized assessment of contamination by radionuclides.

E/47. Another important area is the provision of technical support by the Agency's Laboratories at Seibersdorf to international programmes for monitoring the terrestrial environment and the atmosphere. Their activities will consist principally in providing quality assurance services and in-service training, developing relevant nuclear and isotope techniques, transferring these techniques to developing countries, and providing services to international or regional pollution monitoring and research programmes. The capacity to provide analytical services in the event of emergencies involving the radioactive pollution of the atmosphere and the terrestrial environment will be maintained.

E/48. Another important area is the provision of technical support by the IAEA-MEL to international programmes for monitoring the aquatic environment. The Laboratory's activities will consist principally in providing quality assurance services and in-service training, developing nuclear and isotope techniques for use in studies of environmental processes and of non-nuclear pollution, transferring these techniques to marine laboratories in developing countries, and providing services to international or regional pollution monitoring and research programmes.

E/49. The IAEA-MEL will oversee a CRP and associated research activities on the use of nuclear techniques to study pesticide cycling in tropical ecosystems (supported by major extrabudgetary funding from the Swedish International Development Agency (SIDA)). This project, in collaboration with the FAO/IAEA subprogramme D.5, aims to define and control the impact of land derived pesticide compounds in sensitive tropical coastal areas.

E/50. As the only marine laboratory within the United Nations family of organizations, the IAEA-MEL will maintain its capacity to provide analytical services in the event of emergencies involving either chemical or radioactive pollution of the aquatic environment.

E/51. Funding of the additional high priority activity would assist Member States to develop and improve their capabilities for reliably monitoring non-radioactive environmental pollution and supporting environmentally sustainable development using nuclear analytical techniques. A particular priority is to help meet the goals of UNCED Agenda 21 as well as newly emerging quality management and quality assurance standards. The work would be implemented in collaboration with UNEP.

PROGRAMME F: INDUSTRY AND EARTH SCIENCES

F/1. This programme covers the industrial application of nuclear methods and the promotion of nuclear and isotopic methods in the development of water resources. The focus of the programme will be on assisting developing countries in establishing and strengthening national capabilities in these two areas.

F/2. In the industrial applications area, the great potential of isotopes and radiation technologies for monitoring and helping to preserve the environment has been widely recognized. Radiation processing technologies have considerable potential for the production of new polymeric materials for biomedical applications, for the decontamination of drinking water and industrial waste water and for processing sewage sludge for eventual use as an agricultural fertilizer. There is continuing interest in industrial applications of low cost nucleonic control systems, tracer technology and on-stream nucleonic analysers. Advanced NDT and non-destructive evaluation (NDE) methods such as quantitative computed tomography, neutron radiography and thin layer activation analysis are of interest in many industrial process systems.

F/3. The demand for effective methods that can be applied in hydrological studies of water resources and water pollution has been growing.

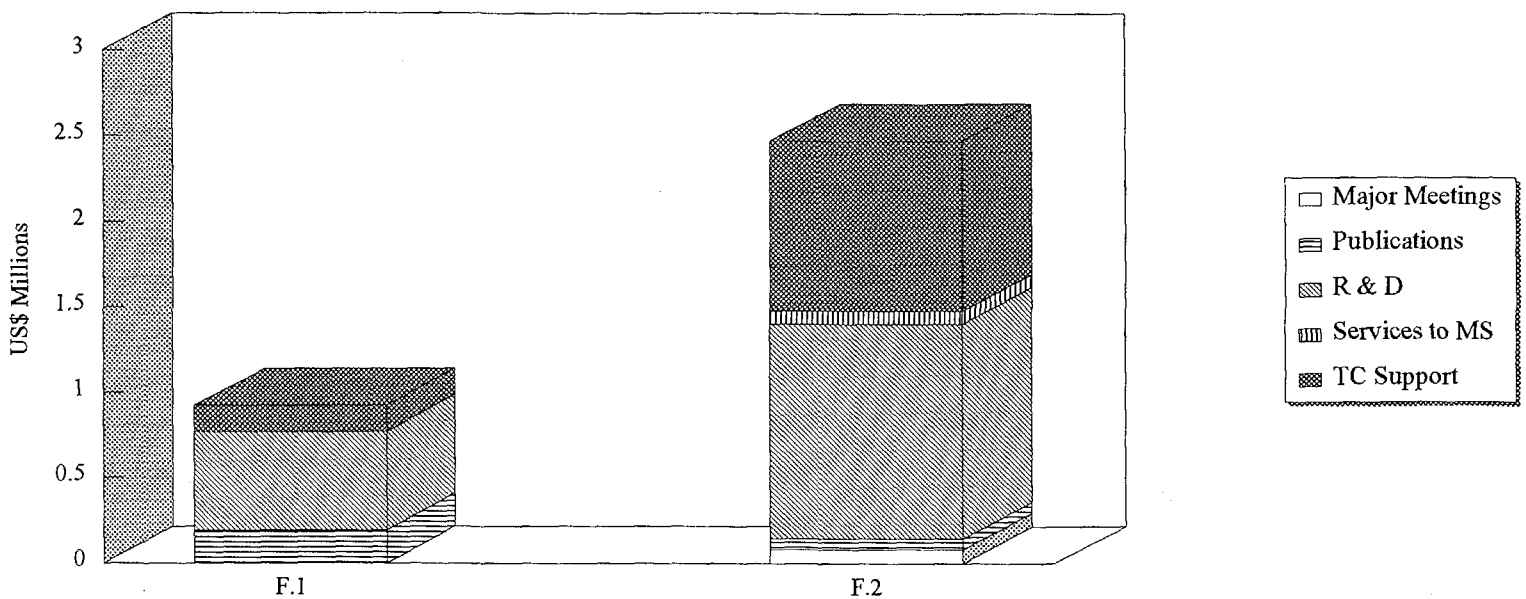
PROGRAMME F: INDUSTRY AND EARTH SCIENCES
Summary of Regular Budget estimates by subprogramme
Table 25

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
F.1	Industrial Applications	RIPC	680 000	200 000	29.4	880 000	24 000	2 7	904 000	5.0	924 000	3.9	985 000
F.2	Development of Water Resources	RIPC/ RIAL	2 432 000	(73 000)	(3.0)	2 359 000	–	–	2 359 000	5.0	2 476 000	4.1	2 577 000
	Additional high-priority activities	RIPC	–	216 000	–	216 000	184 000	85.2	400 000	5.0	227 000	4.1	438 000
Programme F – Industry and Earth Sciences			3 112 000	127 000	4 1	3 239 000	24 000	0.7	3 263 000	5.0	3 400 000	4.1	3 562 000
	Additional high-priority activities		–	216 000	–	216 000	184 000	85.2	400 000	5.0	227 000	4.1	438 000

PROGRAMME F: INDUSTRY AND EARTH SCIENCES

Output by Subprogramme - 1995

Graph 6



PROGRAMME F: INDUSTRY AND EARTH SCIENCES
Summary of Regular Budget Estimates by Project
Table 26

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
F.1.	Industrial Applications													
F.1.01	Assessment and Transfer of Radiation Technology	Cont.	RIPC	257 000	(9 000)	(3.5)	248 000	(19 000)	(7.7)	229 000	5.0	259 000	3.9	249 000
F.1.02	Advanced NDT and NDE Methods	1997	RIPC	137 000	14 000	10.2	151 000	4 000	2.7	155 000	5.0	159 000	3.9	169 000
F.1.03	Assessment and Transfer of Nucleonic Control Systems for the Mineral Industry	1997	RIPC	129 000	4 000	3.1	133 000	1 000	0.8	134 000	5.0	140 000	3.9	146 000
F.1.05	Nuclear Methods for Reducing Industry-related Environmental Pollution	2000	RIPC	157 000	13 000	8.3	170 000	(40 000)	(23.5)	130 000	5.0	179 000	3.9	142 000
F.1.06	Ion-beam Syntehsis and Characterization of New Materials	1998	RIPC	–	51 000	–	51 000	22 000	43.1	73 000	5.0	54 000	3.9	80 000
F.1.07	Radiation Processing of Sewage Sludge and its Use to Increase Crop Yields and to Preserve the Environment (Joint project with D.1.06)	2000	RIPC	–	127 000	–	127 000	56 000	44.1	183 000	5.0	133 000	3.9	199 000
	Sub – total F.1.			680 000	200 000	29.4	880 000	24 000	2.7	904 000	5.0	924 000	3.9	985 000
F.2.	Development of Water Resources													
F.2.01	Development of New Methods for the Assessment of Water Resources with Isotope Techniques	Cont.	RIPC RIAL	579 000	75 000	13.0	654 000	(74 000)	(11.3)	580 000	5.0	686 000	4.1	631 000
F.2.02	Water Resources Evaluation in Arid and Semi-arid Regions	1997	RIPC RIAL	308 000	(80 000)	(26.0)	228 000	(17 000)	(7.5)	211 000	5.0	239 000	4.1	231 000
	Additional high-priority activities													
	CRP on Isotope-aided Studies on Water Losses through Soils and Related Soil Salinization in Arid and Semi-arid Zones		RIPC	–	75 000	–	75 000	10 000	13.3	85 000	5.0	79 000	4.1	93 000
F.2.03	Environmental Investigations with Isotope Techniques	Cont.	RIPC RIAL	618 000	(3 000)	(0.5)	615 000	96 000	15.6	711 000	5.0	646 000	4.1	778 000
F.2.04	Analytical and Intercalibration Services	Cont.	RIPC RIAL	927 000	(65 000)	(7.0)	862 000	(5 000)	(0.6)	857 000	5.0	905 000	4.1	937 000
F.2	Additional high-priority activities													
	Environmental Studies Related to Large Continental Water Bodies (Caspian Sea) – (independent project)		RIPC	–	141 000	–	141 000	174 000	123.4	315 000	5.0	148 000	4.1	345 000
	Sub – total F.2.			2 432 000	(73 000)	(3.0)	2 359 000	–	–	2 359 000	5.0	2 476 000	4.1	2 577 000
	Additional high-priority activities			–	216 000	–	216 000	184 000	85.2	400 000	5.0	227 000	4.1	438 000
Programme F – Industry and Earth Sciences				3 112 000	127 000	4.1	3 239 000	24 000	0.7	3 263 000	5.0	3 400 000	4.1	3 562 000
	Additional high-priority activities			–	216 000	–	216 000	184 000	85.2	400 000	5.0	227 000	4.1	438 000

PROGRAMME F: INDUSTRY AND EARTH SCIENCES
List of projects and estimated total resources for 1995 and 1996
Table 27

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a_/
F.1.	Industrial Applications										
F.1.01	Assessment and Transfer of Radiation Technology	Cont.	RIPC	0.9	0.3	259 000	–	2 535 000	249 000	–	2 535 000
F.1.02	Advanced NDT and NDE Methods	1997	RIPC	0.5	0.2	159 000	–	2 232 000	169 000	–	2 232 000
F.1.03	Assessment and Transfer of Nucleonic Control Systems for the Mineral Industry	1997	RIPC	0.5	0.2	140 000	–	744 000	146 000	–	744 000
F.1.05	Nuclear Methods for Reducing Industry-related Environmental Pollution	2000	RIPC	0.5	0.2	179 000	–	744 000	142 000	–	744 000
F.1.06	Ion-beam Synthesis and Characterization of New Materials	1998	RIPC	0.1	0.1	54 000	–	–	80 000	–	–
F.1.07	Radiation Processing of Sewage Sludge and its Use to Increase Crop Yields and to Preserve the Environment (Joint project with D.1.06) (New project)	2000	RIPC	0.1	0.1	133 000	–	–	199 000	–	–
	Sub – total F.1.			2.6	1.1	924 000	–	6 255 000	985 000	–	6 255 000
F.2.	Development of Water Resources										
F.2.01	Development of New Methods for the Assessment of Water Resources with Isotope Techniques	Cont.	RIPC RIAL	1.8 1.3	1.2 1.7	686 000	–	819 000	631 000	–	819 000
F.2.02	Water Resources Evaluation in Arid and Semi-arid Regions	1997	RIPC RIAL	0.5 0.6	0.3 1.0	239 000	–	328 000	231 000	–	328 000
	Additional high-priority activities										
	CRP on Isotope-aided Studies on Water Losses through Soils and Related Soil Salinization in Arid and Semi-arid Zones		RIPC	–	–	79 000	–	–	93 000	–	–
F.2.03	Environmental Investigations with Isotope Techniques	Cont.	RIPC RIAL	1.4 1.3	0.7 2.1	646 000	–	491 000	778 000	–	491 000
F.2.04	Analytical and Intercalibration Services	Cont.	RIPC RIAL	0.5 1.2	1.0 6.9	905 000	–	982 000	937 000	–	982 000
F.2	Additional high-priority activities										
	Environmental Studies Related to Large Continental Water Bodies (Caspian Sea) – (Independent Project)		RIPC	1.0	1.0	148 000	–	–	345 000	–	–
			RIPC RIAL	4.2 4.4	3.2 11.7						
	Sub – total F.2.			8.6	14.9	2 476 000	–	2 620 000	2 577 000	–	2 620 000
	Additional high-priority activities			1.0	1.0	227 000	–	–	438 000	–	–
Programme F – Industry and Earth Sciences				11 2	16.0	3 400 000	–	8 875 000	3 562 000	–	8 875 000
	Additional high-priority activities			1.0	1.0	227 000	–	–	438 000	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

F

Subprogramme F.1

Industrial Applications

Main Accomplishments (1991-94)

F/4. Radiation processing technology has been introduced to a number of developing countries, in particular for applications in the health care industry.

F/5. New programmes in the area of industrial and environmental applications of isotopes and radiation have been initiated in the regions of Africa, Latin America and Asia and Pacific (the last supported also by Australia, Japan and UNDP).

F/6. New international standards for the sterilization of medical supplies have been promoted and training has been provided in the application of these standards.

F/7. A new programme has been initiated for the use of radiation processing in the conservation of the environment. A symposium and a regional seminar (Latin America) were organized to promote the application of isotope and radiation techniques in this area.

F/8. Work on quality control in industry has continued in terms of NDT techniques, nucleonic control systems and the use of radioactive isotopes as tracers.

F/9. In situ nucleonic techniques have been evaluated for the development of least disruptive mining and resource extraction and processing techniques. The pathways of pollutants and pollutant interactions in the environment have been studied as part of a programme for the application of nuclear techniques for reducing industry related environmental pollution.

Main Activities Planned for 1995-96

F/10. The regular budget resources dedicated to this subprogramme have been increased significantly in 1995 and 1996. This increase is due primarily to the added effort on the new project on radiation processing of sewage sludge and its use as fertilizer to decrease the environmental impact of its disposal as waste. The project will be partly implemented under this subprogramme and partly under subprogramme D.1. No extrabudgetary resources have been identified. The TC effort will remain at about the 1994 level of 85 projects.

F/11. This subprogramme covers the industrial applications of radiation technology, nucleonic control systems, radiotracers, NDT/NDE and applications of nuclear techniques for minimizing industry related environmental pollution.

F/12. The major areas of emphasis continue to be applications of radiation technology, nucleonic control systems and in situ techniques in industry and the protection of the environment. The project on radiotracer applications in the mineral industry has been completed. A new project on ion beam synthesis and characterization of new materials has been included to cover areas in which many developing Member States have shown interest.

F/13. A major focus of attention will be the promotion and evaluation of radiation processing technologies for the decontamination of drinking water and industrial waste water, and for the preparation of bioactive materials and improved polymers.

F/14. A second high priority area will be the application of nuclear techniques for the evaluation of environmental pollutants from the mineral processing industries, and microbiological methods of pollutant detoxification and environmental cleanup.

F/15. In the area of NDT and advanced NDE techniques, an evaluation will be undertaken of industrial CT systems and industrial PET studies.

Subprogramme F.2

Development of Water Resources

Main Accomplishments (1991-94)

F/16. The subprogramme in water resources has covered project activities related to the development and application of isotopic methods in water resources assessment, utilization and management. The framework of the programme involves various nuclear methods in freshwater resources (both surface water and groundwater, including geothermal waters); engineering applications for problems related to hydraulic structures; sediment transport and sedimentation dynamics in estuaries and lakes; and studies and research in environmental pollution.

F/17. Technical support has been provided for the implementation of 56 individual TC projects in Member States. Most of these are applied field applications of isotope methodologies to hydrological problems of immediate priority to the recipient country. In addition, three regional TC projects — one in Latin America within the scope of ARCAL, involving 13 Member States, one in Africa dealing with isotope investigations of groundwater resources in Sahelian countries (5 Member States) and one in the Middle East involving 8 countries — have been successfully completed. A new regional project in Latin America which will involve 9 countries has been initiated on the subject of tracer applications in leakage from dams and reservoirs. While the TC activities have the ultimate objective of technology transfer to Member States, most of the projects involving applied field studies have provided results that are of immediate use for engineering decisions regarding the development and management of the water source.

F/18. Development and research oriented tasks included in the programme have been mostly carried out through CRPs. Eight such CRPs have been operational during the given period, and three have been completed and the results published. The subject matter of these CRPs is designed to meet the immediate needs of improved understanding of basic processes involved in isotopic variations in hydrodynamic systems, and refined quantitative evaluations of isotope data in hydrology. Basic isotope data collection from a global network of precipitation stations has continued, and overall statistical analyses of these data have been finalized and published.

F/19. Training of scientists and technicians, both in the overall spectrum of isotope hydrology methodologies and in analytical techniques for environmental isotopic analyses of water samples has continued.

F/20. Close collaboration has continued with specialized agencies (UNESCO, WMO and FAO) in incorporating isotope techniques into their ongoing programmes.

Main Activities Planned for 1995-96

F/21. The minor decrease in the 1995-96 regular budget resources is due primarily to the reallocation of the costs of the Seibersdorf Laboratory and consequently does not reflect a decline in the volume of effort. An effort will be made to increase TC activity. No extrabudgetary contributions are envisioned for 1995-96.

F/22. In view of the increasing concern with environmental pollution and anthropogenic environmental changes in the hydrosphere and atmosphere, more emphasis will be given to tasks that are related to the development and application of isotope methodologies in this particular field. Also, the hydrological assessment of radioactive waste disposal sites with isotope techniques will be encouraged, in close collaboration with the waste management programme. Projects to be implemented, especially TC projects, will place emphasis on the effective utilization of local capabilities in isotope hydrology for national and regional activities.

F/23. Analytical support and intercalibration services (including intercalibration measurements and distribution of standards) in isotope hydrology will continue to be provided to laboratories in developing countries.

F/24. The development and utilization of isotope methods for scarce water resources in arid and semi-arid regions, particularly for groundwater development and pollution control, will be a priority area. The tasks to be implemented will be designed to complement existing experience and results from regional projects completed in such regions (Sahelian zone, Middle East).

F/25. Two additional high priority activities are identified. First, given the increasing concern with current environmental changes in the Caspian Sea and its environment, an additional high priority activity is proposed: (i) to study changes in the water dynamics, water balance (including sea level), and water quality (including pollution) of the Caspian Sea, (ii) to assess their impact on adjacent groundwater resources in terms of changes in dynamics and quality of the groundwater, and (iii) to examine the isotopic composition of sea sediment as natural archives for past environmental changes. The new activity is a joint effort of RIPC, IAEA-MEL and RIAL. The second additional high priority initiative refers to the estimation and prediction of water losses by evaporation through soils and the related soil salination in arid and semi-arid zones. Extrabudgetary funds would be required for these activities.

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES

G/1. Work under this programme covers five main areas: nuclear and atomic data for applications; nuclear instrumentation; theoretical physics; utilization of research reactors and particle accelerators; and chemistry.

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES
Summary of Regular Budget estimates by subprogramme
Table 28

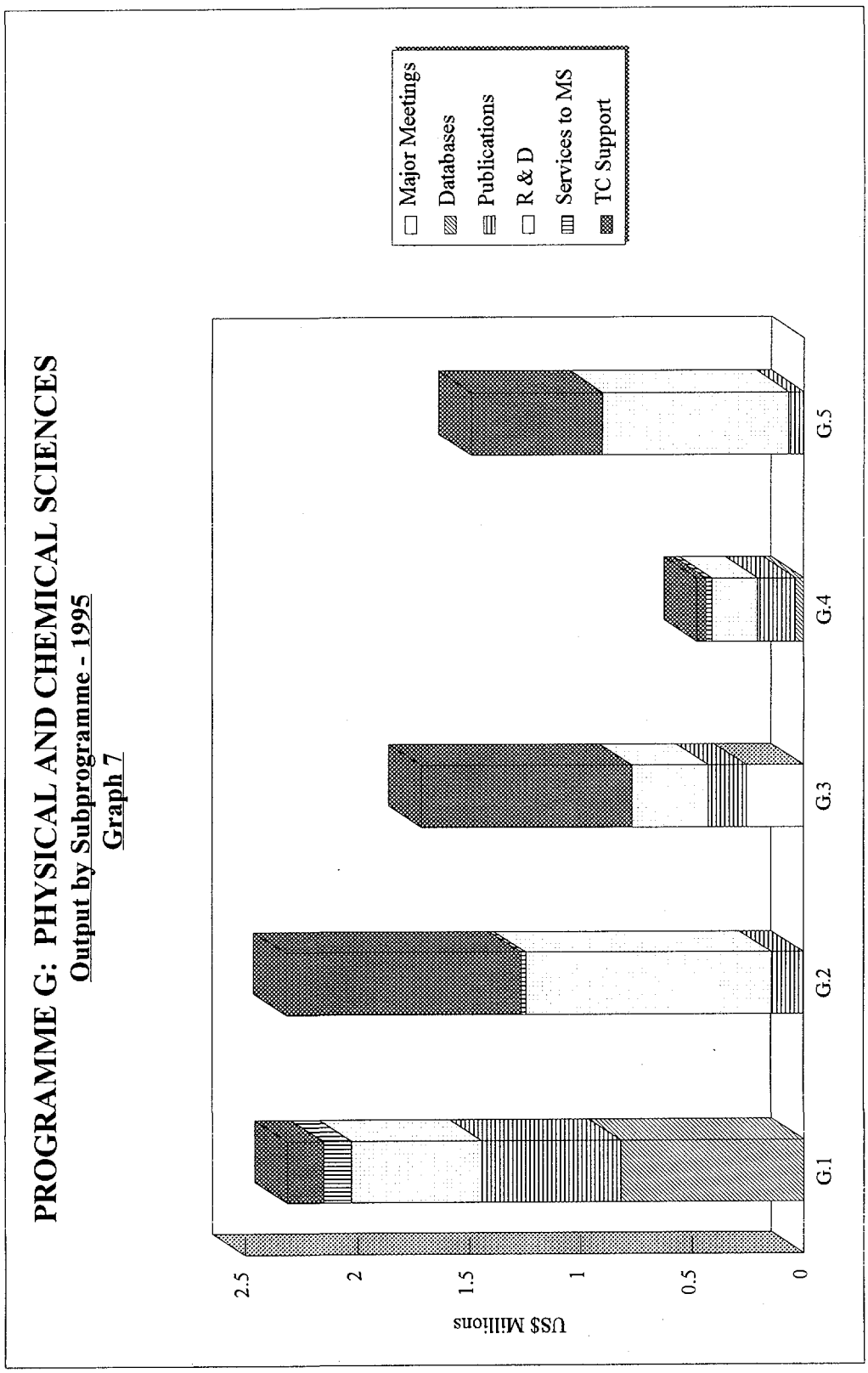
	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
G.1	Nuclear and Atomic Data for Applications	RIPC	2 447 000	(255 000)	(10.4)	2 192 000	(100 000)	(4 6)	2 092 000	5.5	2 312 000	4.3	2 300 000
G.2	Nuclear Instrumentation	RIPC/ RIAL	2 051 000	(95 000)	(4.6)	1 956 000	–	–	1 956 000	4.8	2 049 000	4.1	2 131 000
		RIHU	166 000	86 000	51.8	252 000	30 000	11.9	282 000	6.0	267 000	4.4	310 000
	Additional high–priority activities	RIHU	–	35 000	–	35 000	9 000	25.7	44 000	6.0	37 000	4.4	49 000
G.3	Theoretical Physics	RITP	1 648 000	–	–	1 648 000	–	–	1 648 000	4.0	1 714 000	5.0	1 800 000
G.4	Utilization of Research Reactors and Particle Accelerators	RIPC/ RIAL	462 000	(3 000)	(0.6)	459 000	–	–	459 000	4.4	479 000	3.5	496 000
	Additional high–priority activities	RIPC	–	50 000	–	50 000	–	–	50 000	4.4	52 000	3.5	54 000
G.5	Chemistry	RIPC/ RIAL	1 352 000	69 000	5.1	1 421 000	17 000	1.2	1 438 000	4.9	1 491 000	4.1	1 571 000
	Additional high–priority activities	RIPC RIAL	–	473 000	–	473 000	14 000	3.0	487 000	4.9	496 000	4.1	532 000
Programme G – Physical and Chemical Sciences			8 126 000	(198 000)	(2.4)	7 928 000	(53 000)	(0.7)	7 875 000	4.8	8 312 000	4.3	8 608 000
Additional high–priority activities			–	558 000	–	558 000	23 000	4.1	581 000	4.8	585 000	4.1	635 000

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES

Output by Subprogramme - 1995

Graph 7



G

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES
Summary of Regular Budget Estimates by Project
Table 29

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
G.1.	Nuclear and Atomic Data for Applications													
G.1.01	Data Centre Activities	Cont.	RIPC	1 269 000	(465 000)	(36.6)	804 000	(63 000)	(7.8)	741 000	5.5	847 000	4.3	814 000
G.1.02	International Data Networks, Coordination and Cooperation Projects	Cont.	RIPC	193 000	95 000	49.2	288 000	21 000	7.3	309 000	5.5	304 000	4.3	340 000
G.1.03	Nuclear Data Assessment and Improvement for Applications	Cont.	RIPC	653 000	(160 000)	(24.5)	493 000	39 000	7.9	532 000	5.5	520 000	4.3	585 000
G.1.04	Establishment of International Atomic and Molecular Interaction Data Bases	Cont.	RIPC	332 000	(11 000)	(3.3)	321 000	(94 000)	(29.3)	227 000	5.5	339 000	4.3	249 000
G.1.05	Data User Support and Technology Transfer	Cont.	RIPC	–	286 000	–	286 000	(3 000)	(1.1)	283 000	5.5	302 000	4.3	312 000
	Sub – total G.1.			2 447 000	(255 000)	(10.4)	2 192 000	(100 000)	(4.6)	2 092 000	5.5	2 312 000	4.3	2 300 000
G.2.	Nuclear Instrumentation													
G.2.01	Maintenance of Nuclear Instrumentation	Cont.	RIPC RIAL	1 050 000	(121 000)	(11.5)	929 000	(30 000)	(3.2)	899 000	4.8	973 000	4.1	977 000
G.2.02	Nuclear Spectroscopy	Cont.	RIPC RIAL	624 000	26 000	4.2	650 000	20 000	3.1	670 000	4.8	681 000	4.1	731 000
G.2.03	Nuclear Instruments and Methods for Specific Applications	Cont.	RIPC RIAL	377 000	–	–	377 000	10 000	2.7	387 000	4.8	395 000	4.1	423 000
G.2.04	Quality Control and Preventive Maintenance of Basic and Advanced Nuclear Medical Instruments	Cont.	RIHU	166 000	86 000	51.8	252 000	30 000	11.9	282 000	6.0	267 000	4.4	310 000
	Additional high–priority activities			–	35 000	–	35 000	9 000	25.7	44 000	6.0	37 000	4.4	49 000
			RIPC/ RIAL	2 051 000	(95 000)	(4.6)	1 956 000	–	–	1 956 000	4.8	2 049 000	4.1	2 131 000
			RIHU	166 000	86 000	51.8	252 000	30 000	11.9	282 000	6.0	267 000	4.4	310 000
	Sub–total G.2.			2 217 000	(9 000)	(0.4)	2 208 000	30 000	1.4	2 238 000	4.9	2 316 000	4.1	2 441 000
	Additional high–priority activities			–	35 000	–	35 000	9 000	25.7	44 000	6.0	37 000	4.4	49 000
G.3.	Theoretical Physics													
G.3.01	International Centre for Theoretical Physics		RITP	1 648 000	–	–	1 648 000	–	–	1 648 000	4.0	1 714 000	5.0	1 800 000

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES
Summary of Regular Budget Estimates by Project
Table 29 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
G.4.	Utilization of Research Reactors and Particle Accelerators													
G.4.01	Optimization of Research Reactor Operation, Utilization and Management	Cont.	RIPC RIAL	246 000	(3 000)	(1.2)	243 000	5 000	2.1	248 000	4.4	253 000	3.5	268 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	4.4	52 000	3.5	54 000
G.4.02	Utilization of Particle Accelerators	Cont.	RIPC RIAL	216 000	–	–	216 000	(5 000)	(2.3)	211 000	4.4	226 000	3.5	228 000
	Sub – total G.4.			462 000	(3 000)	(0.6)	459 000	–	–	459 000	4.4	479 000	3.5	496 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	4.4	52 000	3.5	54 000

G

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES
Summary of Regular Budget Estimates by Project
Table 29 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
G.5.	Chemistry													
G.5.01	Production of New Radiopharmaceuticals of 99Tcm and Therapeutic Radiopharmaceuticals	1998	RIPC	239 000	(42 000)	(17.6)	197 000	21 000	10.7	218 000	4.9	207 000	4.1	238 000
G.5.02	Biomolecule Labelling Techniques	2000	RIPC	223 000	(73 000)	(32.7)	150 000	35 000	23.3	185 000	4.9	157 000	4.1	202 000
G.5.03	Indigenous Production of Reagents for Assays of Thyroid-related Hormones	1996	RIPC	55 000	(18 000)	(32.7)	37 000	–	–	37 000	4.9	39 000	4.1	41 000
G.5.04	Analytical Quality Control	Cont.	RIPC/ RIAL	776 000	160 000	20.6	936 000	(25 000)	(2.7)	911 000	4.9	982 000	4.1	995 000
G.5.05	Design and Evaluation of Heat Utilization Systems for the High Temperature Engineering Test Reactor (HTTR)	2000	RIPC	59 000	(19 000)	(32.2)	40 000	(9 000)	(22.5)	31 000	4.9	42 000	4.1	34 000
G.5.06	Additional high-priority activities Evaluation of Newer Radioimmunodiagnostic Agents (RIDA)		RIPC	–	123 000	–	123 000	(21 000)	(17.1)	102 000	4.9	129 000	4.1	111 000
G.5.07	Optimization of Production of Cyclotron-produced Medical Isotopes and Radiopharmaceuticals / Evaluation of Fast Radiochemical Separations	2000	RIPC	–	61 000	–	61 000	(5 000)	(8.2)	56 000	4.9	64 000	4.1	61 000
G.5.08	Additional high-priority activities Enhanced Utility of Analytical Quality Control Services		RIPC RIAL	–	350 000	–	350 000	35 000	10.0	385 000	4.9	367 000	4.1	421 000
	Sub-total G.5.			1 352 000	69 000	5.1	1 421 000	17 000	1.2	1 438 000	4.9	1 491 000	4.1	1 571 000
	Additional high-priority activities		RIPC RIAL	–	473 000	–	473 000	14 000	3.0	487 000	4.9	496 000	4.1	532 000
Programme G – Physical and Chemical Sciences				8 126 000	(198 000)	(2.4)	7 928 000	(53 000)	(0.7)	7 875 000	4.8	8 312 000	4.3	8 608 000
	Additional high-priority activities			–	558 000	–	558 000	23 000	4.1	581 000	4.8	585 000	4.1	635 000

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES
List of projects and estimated total resources for 1995 and 1996
Table 30

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary a/	Estimated Total Resources for 1995 TACF b/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary a/	Estimated Total Resources for 1996 TACF b/
G.1.	Nuclear and Atomic Data for Applications										
G.1.01	Data Centre Activities	Cont.	RIPC	3.9	5.1	847 000	–	–	814 000	–	–
G.1.02	International Data Networks, Coordination and Cooperation Projects	Cont.	RIPC	1 5	1.6	304 000	–	–	340 000	–	–
G.1 03	Nuclear Data Assessment and Improvement for Applications	Cont	RIPC	2.6	1.5	520 000	–	–	585 000	–	–
G.1 04	Establishment of International Atomic and Molecular Interaction Data Bases	Cont	RIPC	2 1	0.7	339 000	–	–	249 000	–	–
G.1.05	Data User Support and Technology Transfer	Cont.	RIPC	2.3	1 5	302 000	–	150 000	312 000	–	150 000
	Sub – total G.1.			12.4	10.4	2 312 000	–	150 000	2 300 000	–	150 000
G.2.	Nuclear Instrumentation										
G.2 01	Maintenance of Nuclear Instrumentation	Cont.	RIPC	0.55	0.24	973 000	–	–	977 000	–	–
			RIAL	1.5	5.8						
G.2.02	Nuclear Spectroscopy	Cont.	RIPC	1.25	0.24	681 000	–	–	731 000	–	–
			RIAL	0.3	2.5						
G.2.03	Nuclear Instruments and Methods for Specific Applications	Cont.	RIPC	0.1	0 14	395 000	–	3 660 000	423 000	–	3 660 000
			RIAL	0.2	2 3						
G.2.04	Quality Control and Preventive Maintenance of Basic and Advanced Nuclear Medical Instruments	Cont.	RIHU	1.1	0.4	267 000	–	538 000	310 000	–	538 000
	Additional high-priority activities			–	–	37 000	–	–	49 000	–	–
			RIPC/	1.9	0.62	2 049 000	–	3 660 000	2 131 000	–	3 660 000
			RIAL	2.0	10.6						
			RIHU	1.1	0.4	267 000	–	538 000	310 000	–	538 000
	Sub-total G.2.			5.0	11.62	2 316 000	–	4 198 000	2 441 000	–	4 198 000
	Additional high-priority activities			–	–	37 000	–	–	49 000	–	–
G.3.	Theoretical Physics										
G.3.01	International Centre for Theoretical Physics		RITP	7.0	25.0	1 714 000	16 092 000	–	1 800 000	12 943 000	–
G.4.	Utilization of Research Reactors and Particle Accelerators										
G.4.01	Optimization of Research Reactor Operation, Utilization and Management	Cont.	RIPC	1.1	0.34	253 000	–	1 477 000	268 000	–	1 477 000
			RIAL	–	–						
	Additional high-priority activities			–	–	52 000	–	–	54 000	–	–
G.4.02	Utilization of Particle Accelerators	Cont.	RIPC	0.6	0.34	226 000	–	923 000	228 000	–	923 000
			RIAL	0.4	–						
			RIPC	1.7	0.68						
			RIAL	0.4	–						
	Sub – total G.4.			2.1	0.68	479 000	–	2 400 000	496 000	–	2 400 000
	Additional high-priority activities			–	–	52 000	–	–	54 000	–	–

PROGRAMME G: PHYSICAL AND CHEMICAL SCIENCES
List of projects and estimated total resources for 1995 and 1996
Table 30 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Extra-Budgetary a_/	TACF b_/	Estimated Total Resources for 1996 Regular Budget	Extra-Budgetary a_/	TACF b_/
G.5.	Chemistry										
G.5.01	Production of New Radiopharmaceuticals of 99Tcm and Therapeutic Radiopharmaceuticals	1998	RIPC	0.5	0 4	207 000	–	1 707 000	238 000	–	1 707 000
G 5.02	Biomolecule Labelling Techniques	2000	RIPC	0.5	0.4	157 000	–	427 000	202 000	–	427 000
G 5.03	Indigenous Production of Reagents for Assays of Thyroid-related Hormones	1996	RIPC	0.3	0.05	39 000	–	213 000	41 000	–	213 000
G.5.04	Analytical Quality Control	Cont.	RIPC/ RIAL	0.8 1.7	0.1 5.3	982 000	–	1 280 000	995 000	–	1 280 000
G.5.05	Design and Evaluation of Heat Utilization Systems for the High Temperature Engineering Test Reactor (HTTR)	2000	RIPC	0.1	0.05	42 000	–	–	34 000	–	–
G.5.06	Additional high-priority activities Evaluation of Newer Radioimmunodiagnostic Agents (RIDA)		RIPC	0.4	0.1	129 000	–	–	111 000	–	–
G.5 07	Optimization of Production of Cyclotron-produced Medical Isotopes and Radiopharmaceuticals / Evaluation of Fast Radiochemical Separations	2000	RIPC	0 4	0.1	64 000	–	341 000	61 000	–	341 000
G.5.08	Additional high-priority activities Enhanced Utility of Analytical Quality Control Services		RIPC RIAL	0.1 1.0	0.05 1 0	367 000	–	–	421 000	–	–
			RIPC RIAL	2.6 1 7	1.1 5.3						
	Sub-total G.5.			4.3	6.4	1 491 000	–	3 968 000	1 571 000	–	3 968 000
	Additional high-priority activities		RIPC RIAL	0.5 1.0	0.15 1.0	496 000	–	–	532 000	–	–
			RIPC	18 6	12.8	6 331 000	–	10 178 000	6 498 000	–	10 178 000
			RIAL	4 1	15.9						
			RITP	7.0	25 0	1 714 000	16 092 000	–	1 800 000	12 943 000	–
			RIHU	1 1	0 4	267 000	–	538 000	310 000	–	538 000
Programme G – Physical and Chemical Sciences				30.8	54 1	8 312 000	16 092 000	10 716 000	8 608 000	12 943 000	10 716 000
	Additional high-priority activities			1.5	1.15	585 000	–	–	635 000	–	–

a_/ Includes funds from other UN organizations.
b_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
Note. Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme G.1

Nuclear and Atomic Data for Applications

Main Accomplishments (1991-94)

G/2. The Agency continued to co-ordinate worldwide networks of nuclear and atomic data centres in order to ensure that data measured and evaluated in one country are made available to scientists and engineers in all Member States. There are three main data centre networks covering nuclear reaction data, nuclear structure and decay data, and atomic and molecular data. Databases were made available on magnetic tapes or diskettes, and over electronic networks. During 1992, for example, the Agency responded to more than 906 requests from 81 Member States for experimental and evaluated data, related data processing computer codes and nuclear data publications. Improved data centre operations and on-line services were accomplished by the installation of a VAX computer and the acquisition of specialized software.

G/3. During the period from 1987 to 1994, the Agency convened a series of meetings to co-ordinate the assembling, processing and testing of a comprehensive Fusion Evaluated Nuclear Data Library (FENDL). FENDL contains data describing the transport of both plasma-source neutrons and secondary gamma rays through reactor components and the resulting radiation effects (e.g. nuclear heating, tritium breeding, activation and material damage). Also included are cross-sections for fusion and other important charged particle nuclear reactions of plasma constituents and data for fusion related neutron dosimetry. In 1993, the first version of this library, FENDL-1, was distributed in processed form to fusion design groups and to interested data experts in Member States.

G/4. Recommended spectroscopic and collisional databases were established for the basic fusion plasma constituents and major plasma impurities. The data are stored in the Agency's ALADDIN database system and are accessible on-line by fusion and atomic physics researchers. A number of reference data compendia for the most important plasma-material interaction processes, as well as for the thermomechanical properties of plasma facing fusion materials, were completed and stored in the ALADDIN system. A new publication series on Atomic and Plasma-Material Interaction Data for Fusion was established in 1991 for rapid communication of fusion relevant data information.

G/5. In co-operation with the ICTP in Trieste, biennial five-week workshops were given. A course in 1992 concentrated on computational methods for nuclear data evaluation and one in 1994 dealt with nuclear data processing and reactor physics.

G/6. The Computer Index of Neutron Data (CINDA) and the International Bulletin on Atomic and Molecular Data for Fusion were issued semi-annually and quarterly, respectively. About 40 reports on nuclear and atomic data research were published annually.

G/7. Fourteen nuclear laboratories in developing countries, mainly in Africa, received assistance in the development of nuclear analytical facilities under the TC programme. An additional 25 developing countries benefitted from organized training courses and in-house fellowships.

G/8. Nuclear, atomic and plasma-material interaction data continued to be compiled, evaluated and generated through CRPs involving more than 30 laboratories in Member States.

Main Activities Planned for 1995-96

G/9. The decrease in the regular budget resources shown for 1995-96 reflects the redirection of resources from this subprogramme to other high priority work. The resource reduction and redirection is possible as a result of some least critical activities being discontinued, others being extended over a longer period to completion and advantage being taken of some efficiencies. No extrabudgetary resources are expected. The number of TC projects decreases in 1995-96 to about 5.

G/10. It is proposed that work under this subprogramme be partially reorganized for the 1995-96 budget cycle to reflect more closely the evolving nature of the field. Therefore, the revised programme description for 1995-96 contains five projects instead of the previous four. It reflects:

- the needs of developing countries for nuclear data services and for nuclear data technology;

- the necessity of worldwide co-ordination of nuclear data centres for efficient use of limited resources;

- the changing priorities in nuclear and atomic data needs for energy applications and the increasing needs for non-energy applications.

G/11. The programme follows closely the recommendations of the International Nuclear Data Committee and the International Fusion Research Council, Subcommittee on Atomic and Molecular Data for Fusion. It is implemented by the operation of a Nuclear and Atomic Data Center whose essential function is the collection and distribution of data. The objectives of this programme are accomplished with minimal resources by taking advantage of international co-operative efforts co-ordinated by the Agency. The programme also supports the participation of experts from developing countries.

G/12. Work will concentrate on two main areas: providing basic international data centre services (primarily to developing countries) and assisting scientists in developing countries to enhance their ability to use nuclear and atomic data; and developing new computerized databases and handbooks for specific areas of importance to a large number of Member States (nuclear, atomic and material property data for use in fusion reactor technology, nuclear, atomic and molecular databases for radiotherapy and medical radioisotope production and improved nuclear data for fission reactor technology, safety and safeguards).

G/13. In the second of these areas, activities in nuclear and atomic data for biomedical applications will continue. The final version of the FENDL library will be completed and used in the ITER final design phase. Work will begin on establishing an international library of activation cross-sections and an international "Chart of the Nuclides". Research programmes on photon production, charged particle data for applications and photonuclear data evaluation will be initiated. Assessment of the nuclear data needs for decommissioning and for advanced nuclear reactors will begin. The databases will be made available via electronic networks.

G/14. Activities in the area of atomic and molecular data will continue to be focused on the establishment of international reference databases for applications in the areas of nuclear and non-nuclear energy. The data information and the associated documentation will be widely distributed to interested users in Member States and will be stored in the Agency's ALADDIN data system for access on-line.

Subprogramme G.2

Nuclear Instrumentation

Main Accomplishments (1991-94)

G/15. With the assistance of the Agency's Laboratories in Seibersdorf, seven interregional, twelve regional, and seven national training courses have been organized in the following areas: nuclear electronics; interfacing of nuclear experiments; maintenance, repair and protection of nuclear instruments; and nuclear spectroscopy. Around 400 scientists and technicians from developing Member States have received training. In addition, some 100 fellows received a total of 300 person-months training in the maintenance, design and repair of nuclear instruments as well as in X ray fluorescence analysis.

G/16. The Agency's recently developed software package for the analysis of X ray and gamma ray spectra, for quantitative X ray fluorescence (XRF) work and for neutron activation analysis has been upgraded. This software is available, cost free, to researchers in Member States.

G/17. Special instruments for dosimetry and radiation protection have been designed and constructed in order to meet specific requirements of users in developing Member States or in the Agency's Laboratories.

G/18. The spare parts service for the Latin American region continued. Between 1990 and 1993, about 420 requests from 15 Latin American countries for 750 items were processed. A spare parts service was also provided for 8 countries in the African region.

G/19. An XRF laboratory was established at the Seibersdorf Laboratory and new XRF techniques were developed to provide training in the methodology and applications of this analytical support for the Agency's programme.

G/20. Accuracy was improved and the range of applicability of XRF was extended for environmental monitoring and analysis of geological and biological materials.

G/21. Special modular nuclear electronic instruments, not available commercially, have been designed/modified, built and provided to developing Member States for the training of local staff.

Main Activities Planned for 1995-96

G/22. The reduction shown in the RIPC regular budget resources is due to the reallocation of project costs at the Seibersdorf Laboratory and does not actually represent a decrease in the level of effort. The increase reflected in the RIHU resources is to provide additional effort in the

quality control and maintenance of nuclear medicine instruments. The number of TC projects is expected to increase to about 80 in 1995-96. No extrabudgetary resources have been identified.

G/23. The main purpose of the activities in this subprogramme is to improve the capabilities of laboratories, mainly in developing countries, to use, maintain and repair nuclear instruments. All the work is strongly oriented towards TC projects. Support is provided for the design and construction of special purpose, non-commercially available nuclear instruments, especially those needed to meet specific needs in TC projects.

G/24. The main activity will continue to be the improvement of capabilities to maintain, repair and service nuclear instruments used in different fields and projects, by training local technicians and engineers in all aspects of maintenance, establishing a system for the rapid provision of technical advice and spare parts, and providing technical support to strengthen regional co-operation. Co-operation will be maintained with other United Nations agencies, non-governmental organizations and national institutions in establishing a unified approach to manpower development, instrument maintenance and the provision of spare parts in developing countries.

G/25. Attempts to promote particular laboratories as regional or subregional centres for nuclear instrumentation maintenance will continue.

G/26. The Agency's spare parts services will be expanded, with the goal of extending it to all four major world regions. The service in the African region will be extended by 2-3 Member States per year.

G/27. Information on techniques and methods in applied spectroscopy, both in research laboratories and in applied or routine work, will be collected and assessed. Software for nuclear spectroscopy will be evaluated and improved.

G/28. Support will be given for the design, modification and construction of special nuclear instruments which are not available commercially, for safeguards, environmental monitoring and training activities in the field of nuclear instrumentation and interfacing. New techniques for the maintenance and repair of computer based nuclear instruments will be studied and developed, as will XRF techniques for bulk and microanalysis of environmental materials.

G/29. Resources for an additional high priority activity have been requested. If funded, it would provide the use of computer assisted learning in quality control of nuclear medicine instruments and could help train nuclear medical personnel beyond the capability of conventional training programmes.

Subprogramme G.3

Theoretical Physics

Main Accomplishments (1991-94)

G/30. A new feature of the ICTP training programme which started in 1991 was the diploma course for young graduates from developing countries. The programme covered high energy physics and condensed matter physics in 1991 and mathematics in 1992. New research lines have since been introduced, namely a project on the structure of the solid earth and earthquake prediction, a laboratory workshop in atmospheric physics and radiopropagation, and a research group on climatology.

G/31. In order to keep its facilities constantly adequate for excellence-level science, the ICTP has introduced computerized library services, and has been upgrading the scientific computer facilities.

G/32. Through the Office of External Activities, the ICTP expanded its programmes from the sponsoring of scientific meetings, visiting scholars and affiliated centres to the establishment of networks of institutes in developing countries.

Main Activities Planned for 1995-96

G/33. The Agency will continue to maintain its level of support for this subprogramme in 1995-96. The extrabudgetary resources are expected to remain at the same level as 1994.

G/34. The activities of this subprogramme are carried out entirely at ICTP in Trieste and will continue to represent a small part (less than 10%) of the Centre's overall programme, which covers fundamental and applied physics and mathematics, material sciences, earth and environmental sciences, renewable energies and specific areas of advanced technologies.

G/35. The possibility of reducing the Agency's administrative responsibility for the implementation of the Centre's programme is still being considered; this process is expected to be completed before the end of 1994.

Subprogramme G.4

Utilization of Research Reactors and Particle Accelerators

Main Accomplishments (1991-94)

G/36. A number of technical publications were produced on standard specifications for low enriched uranium (LEU) fuel, research reactor core conversion and the determination of research reactor fuel burnup. These documents provided guidance to Member States who are engaged in research reactor power upgrading and the conversion of reactor cores from highly enriched uranium to LEU.

G/37. The Research Reactor Database (RRDB) was maintained and updated annually. This database provides information on fuel, utilization and technical features of all research reactors, and is used for

assessing requirements for fuel fabrication and waste management, statistical analyses and forecasting. Using the RRDB, two editions of the booklet, Reference Data Series No. 3, Nuclear Research Reactors in the World, were published. The database has been converted from the mainframe computer to a format for use with personal computers and has been made available to Member States.

G/38.Through CRPs, several personal computer based programmes were developed for the analysis of reactor cores.

G/39.A number of training courses were organized on research reactor calculations and safety analyses. Courses were also organized on reactor physics measurements and the utilization of research reactors for basic research and applied programmes.

Main Activities Planned for 1995-96

G/40.The resource level for this subprogramme remains essentially the same as in 1994. An increase in the number of TC projects to about 65 is probable. No extrabudgetary resources are expected.

G/41.The main purposes of the activities in this subprogramme are to improve the utilization, primarily in developing Member States, of research reactors and particle accelerators for fundamental and applied research, and to assist in the training of indigenous technical, scientific and engineering personnel. The efforts are strongly oriented toward providing support to TC projects.

G/42.Emphasis will be given to the better understanding of research reactor technology and the improvement of experimental facilities. In particular, efforts will be directed toward improving capabilities for analysing reactor performance, measuring reactor parameters experimentally and upgrading reactor instrumentation.

G/43.Support will continue to be given to the conversion of research reactors to the use of LEU.

G/44.Additional emphasis will be placed on the use of particle accelerators for materials analysis. The Agency's ability to provide analytical support to laboratories in developing Member States will be improved. In order to provide advanced analytical services needed in the areas of environmental material science, human health and special analysis for safeguards, arrangements will be made for the Agency to use different beam lines at existing accelerators in nearby Member States and/or to install a 3 MV tandem electrostatic machine at the Agency's Seibersdorf Laboratory. Advice, training and maintenance services will be provided to developing Member States possessing accelerator facilities.

G/45. An additional high priority activity has been identified for consideration. If funded, it would expand the work on optimizing research reactor operation, utilization and management.

Subprogramme G.5

Chemistry

Main Accomplishments (1991-94)

G/46. With the Agency's support, national capabilities for the indigenous production of modern radiopharmaceuticals required for diagnostic investigations in cardiology, neurology and oncology have been established in several developing Member States. Efficient and streamlined quality control protocols have been established for the production of ^{131}I and $^{99}Tc^{m}$ labelled radiopharmaceuticals.

G/47. Good progress has been made in establishing the protocols for the preparation of the second generation therapeutic radionuclides and radiopharmaceuticals required for palliative therapy of bone cancer.

G/48. The analytical quality control services offered have upgraded the level of quality control in analytical laboratories in developing countries.

Main Activities Planned for 1995-96

G/49. The slight increase in regular budget resources reflects the redistribution of costs at the Seibersdorf Laboratory and does not correspond to an increase in the level of effort in this subprogramme. The number of planned TC projects will probably remain at the 1994 level of approximately 95.

G/50. There is no substantial change in emphasis in this subprogramme. The development and evaluation of second generation therapeutic radioisotopes and radiopharmaceuticals for palliative therapy of bone cancer has been included. The CRP for the development of alternative technologies for $^{99}Tc^{m}$ generators will be completed in 1994. New projects for the evaluation of recently developed radioimmunodiagnostic agents (RIDA) and optimization of the production of cyclotron produced medical isotopes and radiopharmaceuticals and evaluations of fast radiochemical separations have been included to focus on the increasing use of these new products in advanced nuclear medicine procedures.

G/51. The main activities are aimed at establishing or enhancing capabilities in developing Member States to produce state-of-the-art radiopharmaceuticals for SPET diagnostic investigations in nuclear medicine and for therapy.

G/52. The very promising areas of immunodiagnosis and applications of PET radiopharmaceuticals will be reviewed and the creation of local capabilities for the production of these radiopharmaceuticals is an important objective.

G/53. A very important component of this programme will be the continued operation of services to promote better quality control in analytical laboratories in developing countries.

G/54. Two additional high priority activities in this subprogramme would deal with the evaluation of new radioimmunodiagnostic agents and the enhancement of analytical quality control services. The former will permit local production of labelled antigens and antibodies relevant to breast and lung cancers and their therapy. The latter is concerned with the expansion of the AQCS to meet the expanding environmental conservation activities in Member States.

MAJOR PROGRAMME 3

NUCLEAR SAFETY AND RADIATION PROTECTION

MAJOR PROGRAMME 3
NUCLEAR SAFETY AND RADIATION PROTECTION
Summary of total resources by programme
Table 31

	Programme / Major Programme	1995 Staffing P	1995 Staffing GS	1995 Regular Budget estimates	1995 Funds from other UN organizations	1995 Other extra-budgetary resources	1995 TACF a_/	1996 Regular Budget estimates	1996 Funds from other UN organizations	1996 Other extra-budgetary resources	1996 TACF a_/
H.	Radiation Safety	14.3	10.5	4 400 000	–	3 049 000	9 110 000	4 556 000	–	3 145 000	9 520 000
	Additional high-priority activities	–	–	584 000	–	–	–	702 000	–	–	–
I.	Safety of Nuclear Installations	25.7	16.1	6 693 000	–	3 234 000	5 100 000	7 041 000	–	1 884 000	6 285 000
	Additional high-priority activities	–	–	211 000	–	–	–	273 000	–	–	–
	Major Programme 3	40.0	26.6	11 093 000	–	6 283 000	14 210 000	11 597 000	–	5 029 000	15 805 000
	Additional high-priority activities	–	–	795 000	–	–	–	975 000	–	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME H: RADIATION SAFETY

H/1. The regular budget resources available to this programme have been constrained to an almost constant level in spite of the fact that a much higher level of activities in radiation safety is expected. A large fraction of activities in this area will probably be carried out under TC projects.

H/2. During 1991-94 a major achievement was the revision of the Basic Safety Standards to reflect the revised recommendations of the ICRP. Concurrently, a start was made in several areas to review and update existing publications and a number of new Safety Series and guidance documents were published. This process will continue throughout the 1995-96 programme. The review has highlighted the need for close liaison with the other international bodies involved with radiation safety to ensure harmonization of activities and avoid duplication.

H/3. The provision of assistance to strengthen — and in some cases to create — radiation safety infrastructures in Member States continues to grow in importance. As many Member States use large radiation sources in industry and medicine, much effort has been devoted to the preparation of appropriate safety standards and practical guidance on the safe operation and regulation of such sources, embracing occupational and public exposure control. The training and TC programmes are an essential element in the familiarization of professionals in Member States with this guidance. In the countries of the former USSR, specific attention is being paid to the development of good radiation safety infrastructures, within which the control of sources forms an important part.

H/4. The radiation safety programme covers a wide range of areas in which information exchange, research co-ordination, safety standards development and harmonization, practical assistance services and training are required. Each of these is important in its own right and together they provide a coherent and co-ordinated framework for the achievement of good radiation safety practices throughout Member States. The technical themes covered by the major subprogrammes are occupational radiation protection (including medical aspects of overexposures), protection of the public and the environment (including assessment of the on-going consequences of the Chernobyl accident), safe transport of radioactive material, the safety of radiation sources and emergency planning and preparedness. This programme is imparted to Member States through the dissemination of documents, co-ordination of research activities, provision of education and training, and assistance and advice by expert teams, including the rendering of Radiation Protection Advisory Team (RAPAT) services.

H/5. An average of some 150 national, regional and interregional TC projects, more than 200 fellowships and 10 training courses are expected to be handled each year.

H/6. The structure of the programme has been modified to some extent from that in 1993-94 to consolidate activities into a smaller number of subprogrammes and projects.

H/7. The provision of cost-free experts by Member States and temporary assistance under the regular budget are important for the radiation safety programme.

PROGRAMME H: RADIATION SAFETY
Summary of Regular Budget estimates by subprogramme
Table 32

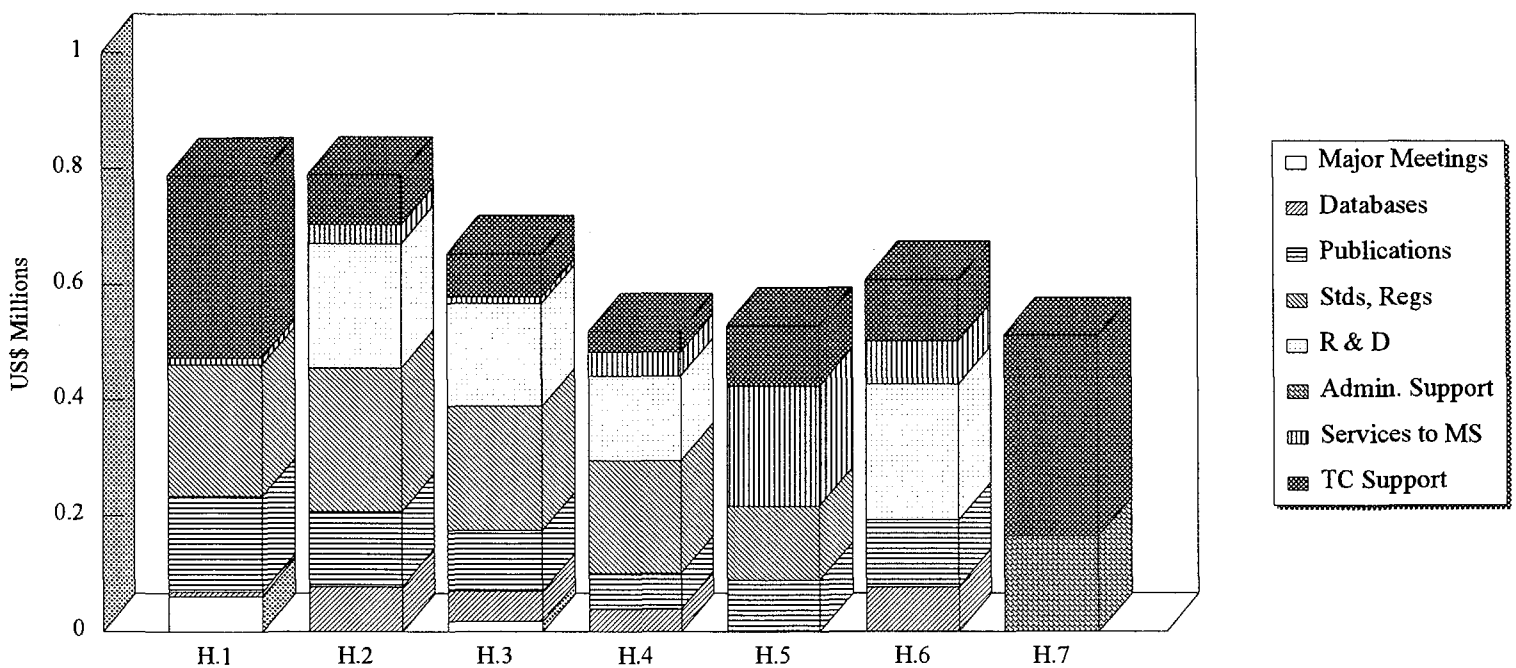
	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
H.1	Strengthening of Radiation Safety	NENS	711 000	36 000	–	747 000	(25 000)	(3.4)	722 000	5.5	788 000	4.2	794 000
	Additional high-priority activities		–	69 000	–	69 000	(13 000)	(18.8)	56 000	5.5	73 000	4.2	61 000
H.2	Occupational Radiation Protection	NENS	805 000	(56 000)	(7.0)	749 000	(12 000)	(1.6)	737 000	5.5	790 000	4.0	807 000
	Additional high-priority activities		–	135 000	–	135 000	–	–	135 000	5.5	142 000	4.0	148 000
H.3	Radiation Protection of the Public and the Environment (Merged with old H.8)	NENS	719 000	(101 000)	(14.1)	618 000	(26 000)	(4.2)	592 000	5.7	653 000	3.8	649 000
	Additional high-priority activities		–	50 000	–	50 000	–	–	50 000	5.7	53 000	3.8	55 000
H.4	Safe Transport of Radioactive Material	NENS	550 000	(57 000)	(10.4)	493 000	58 000	11.8	551 000	5.3	519 000	4.1	603 000
	Additional high-priority activities		–	50 000	–	50 000	50 000	100.0	100 000	5.3	53 000	4.1	109 000
H.5	Emergency Preparedness	NENS	478 000	26 000	5.4	504 000	(17 000)	(3.4)	487 000	5.0	529 000	4.5	535 000
	Additional high-priority activities		–	50 000	–	50 000	–	–	50 000	5.0	53 000	4.5	55 000
H.6	Safety of Radiation Sources	NENS	528 000	50 000	9.5	578 000	5 000	0.9	583 000	5.4	609 000	3.9	639 000
	Additional high-priority activities		–	100 000	–	100 000	50 000	50.0	150 000	5.4	105 000	3.9	164 000
H.7	Radiation Safety Services	NENS	429 000	55 000	12.8	484 000	(6 000)	(1.2)	478 000	5.8	512 000	4.5	529 000
	Additional high-priority activities		–	100 000	–	100 000	–	–	100 000	5.2	105 000	4.4	110 000
Programme H – Radiation Safety			4 220 000	(47 000)	(1.1)	4 173 000	(23 000)	(0.6)	4 150 000	5.4	4 400 000	4.1	4 556 000
	Additional high-priority activities		–	554 000	–	554 000	87 000	15.7	641 000	5.4	584 000	4.0	702 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME H: RADIATION SAFETY

Output by Subprogramme - 1995

Graph 8



H

PROGRAMME H: RADIATION SAFETY
Summary of Regular Budget Estimates by Project
Table 33

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
H.1.	Strengthening of Radiation Safety													
H.1.01	Harmonization of Radiation Safety Standards and Practices	Cont.	NENS	413 000	14 000	3.4	427 000	(30 000)	(7.0)	397 000	5.5	450 000	4.2	437 000
H.1.02	Strengthening Radiation and Nuclear Safety Infrastructure in Member States, Including Education and Training	Cont.	NENS	298 000	(59 000)	(19.8)	239 000	5 000	2.1	244 000	5.5	253 000	4.2	268 000
	Additional high-priority activities			–	69 000	–	69 000	(13 000)	(18.8)	56 000	5.5	73 000	4.2	61 000
H.1.03	Joint UNDP/IAEA Assistance Programme to Strengthen Radiation and Nuclear Safety Infrastructures in the Former USSR (New Project)	1998	NENS	–	81 000	–	81 000	–	–	81 000	5.5	85 000	4.2	89 000
	Sub-total H.1			711 000	36 000	–	747 000	(25 000)	(3.4)	722 000	5.5	788 000	4.2	794 000
	Additional high-priority activities			–	69 000	–	69 000	(13 000)	(18.8)	56 000	5.5	73 000	4.2	61 000
H.2.	Occupational Radiation Protection													
H.2.01	Optimization Occupational Radiation Protection	Cont.	NENS	160 000	44 000	27.5	204 000	(19 000)	(9.3)	185 000	5.5	215 000	4.0	203 000
H.2.02	Monitoring of Individual Workers and Controlled Areas	Cont.	NENS	290 000	79 000	27.2	369 000	(16 000)	(4.3)	353 000	5.5	389 000	4.0	386 000
H.2.03	Guidance on Assessment and Treatment of Radiation Effects	Cont.	NENS	220 000	(44 000)	(20.0)	176 000	23 000	13 1	199 000	5.5	186 000	4.0	218 000
H.2.04	Providing Guidance on Radiation Protection in Mining (Phased Out) (some activites to be carried out under H.2.01 and H.2.02)			135 000	(135 000)	(100.0)	–	–	–	–	–	–	–	–
	Additional high-priority activities			–	135 000	–	135 000	–	–	135 000	5.5	142 000	4.0	148 000
	Sub-total H.2.			805 000	(56 000)	(7.0)	749 000	(12 000)	(1.6)	737 000	5.5	790 000	4.0	807 000
				–	135 000	–	135 000	–	–	135 000	5.5	142 000	4.0	148 000

PROGRAMME H: RADIATION SAFETY
Summary of Regular Budget Estimates by Project
Table 33 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
H.3.	Radiation Protection of the Public and the Environment													
H.3.01	Optimization of Radiation Protection of the Public	Cont.	NENS	169 000	(3 000)	(1.8)	166 000	(19 000)	(11.5)	147 000	5.7	175 000	3.8	161 000
H.3.02	Radiation Modelling and Monitoring of the Environment	Cont.	NENS	160 000	33 000	20.6	193 000	(26 000)	(13.5)	167 000	5.7	205 000	3.8	183 000
H.3.03	Assessing Radiological Impacts on the Environment (Phased Out)		NENS	39 000	(39 000)	(100.0)	–	–	–	–	–	–	–	–
H.3.03	Follow-up of the Radiological Consequences of the Chernobyl Accident (Old H.8.)	Cont.	NENS	115 000	(2 000)	(1.7)	113 000	(2 000)	(1.8)	111 000	5.7	119 000	3.8	122 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	5.7	53 000	3.8	55 000
H.3.04	Assessment and Control of Radon Exposure	Cont.	NENS	236 000	(90 000)	(38.1)	146 000	21 000	14.4	167 000	5.7	154 000	3.8	183 000
	Sub-total H.3.			719 000	(101 000)	(14.1)	618 000	(26 000)	(4.2)	592 000	5.7	653 000	3.8	649 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	5.7	53 000	3.8	55 000
H.4.	Safe Transport of Radioactive Material													
H.4.01	Maintenance and Implementation of the IAEA Transport Regulations	Cont.	NENS	550 000	(57 000)	(10.4)	493 000	58 000	11 8	551 000	5.3	519 000	4.1	603 000
	Additional high-priority activities			–	50 000	–	50 000	50 000	100.0	100 000	5.3	53 000	4.1	109 000
H.5.	Emergency Preparedness													
H.5.01	Radiological Emergency Strategies	Cont.	NENS	170 000	25 000	14.7	195 000	(11 000)	(5.6)	184 000	5.0	205 000	4.5	202 000
H.5.02	Emergency Assistance Services	Cont.	NENS	308 000	1 000	0.3	309 000	(6 000)	(1.9)	303 000	5.0	324 000	4.5	333 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	5.0	53 000	4.5	55 000
	Sub – total H.5.			478 000	26 000	5.4	504 000	(17 000)	(3.4)	487 000	5.0	529 000	4.5	535 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	5.0	53 000	4.5	55 000

H

PROGRAMME H: RADIATION SAFETY
Summary of Regular Budget Estimates by Project
Table 33 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
H.6.	Safety of Radiation Sources													
H.6.01	Design, Control and Safe Use of Radiation Sources (Combination of Old H.6.01 and H.6.02)	Cont.	NENS	512 000	66 000	12.9	578 000	5 000	0.9	583 000	5.4	609 000	3.9	639 000
	Additional high-priority activities			–	100 000	–	100 000	50 000	50.0	150 000	5.4	105 000	3.9	164 000
H.6.03	Probabilistic Safety Assessment (PSA) Techniques for Radiation Sources (Phased Out – general techniques to be addressed under I.5)			16 000	(16 000)	(100.0)	–	–	–	–	–	–	–	–
	Sub-total H.6.			528 000	50 000	9.5	578 000	5 000	0.9	583 000	5.4	609 000	3.9	639 000
	Additional high-priority activities			–	100 000	–	100 000	50 000	50.0	150 000	5.4	105 000	3.9	164 000
H.7.	Radiation Safety Services													
H.7.01	Radiation Protection Advisory Teams (RAPAT) Services	Cont.	NENS	255 000	55 000	21.6	310 000	(6 000)	(1.9)	304 000	6.1	329 000	4.6	338 000
H.7.02	Laboratory Services	Cont.	NENS	174 000	–	–	174 000	–	–	174 000	5.2	183 000	4.4	191 000
	Additional high-priority activities			–	100 000	–	100 000	–	–	100 000	5.2	105 000	4.4	110 000
	Sub-total H.7.			429 000	55 000	12.8	484 000	(6 000)	(1.2)	478 000	5.8	512 000	4.5	529 000
	Additional high-priority activities			–	100 000	–	100 000	–	–	100 000	5.2	105 000	4.4	110 000
Programme H – Radiation Safety				4 220 000	(47 000)	(1.1)	4 173 000	(23 000)	(0.6)	4 150 000	5.4	4 400 000	4.1	4 556 000
	Additional high-priority activities			–	554 000	–	554 000	87 000	15.7	641 000	5.4	584 000	4.0	702 000

PROGRAMME H: RADIATION SAFETY

List of projects and estimated total resources for 1995 and 1996

Table 34

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a/
H 1.	Strengthening of Radiation Safety										
H.1.01	Harmonization of Radiation Safety Standards and Practices	Cont.	NENS	1.6	0.8	450 000	–	800 000	437 000	–	900 000
H.1.02	Strengthening Radiation and Nuclear Safety Infrastructure in Member States, Including Education and Training	Cont.	NENS	1.0	0.7	253 000	–	2 500 000	268 000	–	2 500 000
	Additional high-priority activities			–	–	73 000	–	–	61 000	–	–
H.1.03	Joint UNDP/IAEA Assistance Programme to Strengthen Radiation and Nuclear Safety Infrastructures in the Former USSR (New Project)	1998	NENS	0.5	0.2	85 000	2 275 000	400 000	89 000	2 275 000	450 000
	Sub-total H.1.			3.1	1.7	788 000	2 275 000	3 700 000	794 000	2 275 000	3 850 000
	Additional high-priority activities			–	–	73 000	–	–	61 000	–	–
H.2.	Occupational Radiation Protection										
H.2.01	Optimization Occupational Radiation Protection	Cont.	NENS	0.9	0.5	215 000	–	185 000	203 000	–	195 000
H.2.02	Monitoring of Individual Workers and Controlled Areas	Cont.	NENS	1.1	0.6	389 000	–	480 000	386 000	–	540 000
H.2.03	Guidance on Assessment and Treatment of Radiation Effects	Cont.	NENS	0.8	0.5	186 000	–	200 000	218 000	–	200 000
H.2.04	Providing Guidance on Radiation Protection in Mining (Phased Out) (some activites to be carried out under H.2.01 and H.2.02)			–	–	–	–	–	–	–	–
	Additional high-priority activities			–	–	142 000	–	–	148 000	–	–
	Sub-total H.2.			2.8	1.6	790 000	–	865 000	807 000	–	935 000
				–	–	142 000	–	–	148 000	–	–
H 3.	Radiation Protection of the Public and the Environment										
H 3.01	Optimization of Radiation Protection of the Public	Cont.	NENS	0.7	0.3	175 000	–	150 000	161 000	–	150 000
H.3.02	Radiation Modelling and Monitoring of the Environment	Cont.	NENS	0.8	0.4	205 000	–	150 000	183 000	–	150 000
H.3 03	Follow-up of the Radiological Consequences of the Chernobyl Accident (Old H.8.)	Cont.	NENS	0.7	0.3	119 000	675 000	100 000	122 000	771 000	100 000
	Additional high-priority activities			–	–	53 000	–	–	55 000	–	–
H.3.04	Assessment and Control of Radon Exposure	Cont.	NENS	–	0.2	154 000	–	300 000	183 000	–	300 000
	Sub-total H 3.			2.2	1.2	653 000	675 000	700 000	649 000	771 000	700 000
	Additional high-priority activities			–	–	53 000	–	–	55 000	–	–
H 4.	Safe Transport of Radioactive Material										
H 4.01	Maintenance and Implementation of the IAEA Transport Regulations	Cont.	NENS	1.0	1.0	519 000	75 000	115 000	603 000	75 000	120 000
	Additional high-priority activities			–	–	53 000	–	–	109 000	–	–

PROGRAMME H: RADIATION SAFETY
List of projects and estimated total resources for 1995 and 1996
Table 34 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Extra-Budgetary	TACF a_/	Estimated Total Resources for 1996 Regular Budget	Extra-Budgetary	TACF a_/
H.5.	Emergency Preparedness										
H 5 01	Radiological Emergency Strategies	Cont	NENS	1 0	0.5	205 000	–	230 000	202 000	–	240 000
H 5.02	Emergency Assistance Services	Cont.	NENS	0.2	2 0	324 000	–	600 000	333 000	–	675 000
	Additional high-priority activities			–	–	53 000	–	–	55 000	–	–
	Sub - total H.5.			1.2	2.5	529 000	–	830 000	535 000	–	915 000
	Additional high-priority activities			–	–	53 000	–	–	55 000	–	–
H.6.	Safety of Radiation Sources										
H.6.01	Design, Control and Safe Use of Radiation Sources (Combination of Old H.6.01 and H.6 02)	Cont.	NENS	3 0	0.5	609 000	24 000	900 000	639 000	24 000	1 000 000
	Additional high-priority activities			–	–	105 000	–	–	164 000	–	–
	Sub-total H.6.			3 0	0.5	609 000	24 000	900 000	639 000	24 000	1 000 000
	Additional high-priority activities			–	–	105 000	–	–	164 000	–	–
H.7.	Radiation Safety Services										
H.7.01	Radiation Protection Advisory Teams (RAPAT) Services	Cont.	NENS	1 0	2.0	329 000	–	2 000 000	338 000	–	2 000 000
H.7.02	Laboratory Services	Cont.	NENS	[3.0]	[7 0]	183 000	–	–	191 000	–	–
	Additional high-priority activities			–	–	105 000	–	–	110 000	–	–
	Sub-total H.7.			1.0	2.0	512 000	–	2 000 000	529 000	–	2 000 000
	Additional high-priority activities			–	–	105 000	–	–	110 000	–	–
Programme H - Radiation Safety				14.3	10.5	4 400 000	3 049 000	9 110 000	4 556 000	3 145 000	9 520 000
	Additional high-priority activities			–	–	584 000	–	–	702 000	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme H.1

Strengthening of Radiation Safety

Main Accomplishments (1991-94)

H/8. The major achievement has been the preparation, after extensive consultation and liaison with Member States and other international organizations, of the revised Basic Safety Standards of the Agency. The preparation was co-ordinated through a joint secretariat including the ILO, WHO, FAO, OECD/NEA and PAHO, with the Agency taking the lead. In parallel with the development of the new international Basic Safety Standards, a start has been made on the preparation of other standards or the revision of existing standards to produce a coherent and comprehensive set of guidance covering all aspects of radiation safety.

H/9. In contrast to the prevailing trend prior to 1989, when TC project resources devoted to radiation and nuclear safety were marked by a significant annual growth, in 1991-94 these resources reached a saturation level. However, the complexity of projects dealing with radiation and nuclear safety infrastructures has continued to increase. An average of 200 national, regional and interregional TC projects, more than 200 fellowships and 20 training events or workshops have been handled annually to help establish and strengthen national radiation and nuclear safety infrastructures in Member States. The main task is to ensure that the Agency's approved safety standards and measures are applied by Member States in all TC activities.

Main Activities Planned for 1995-96

H/10. There is some increase in the regular budget resources for this subprogramme, largely due to an increase for the joint UNDP/IAEA programme to strengthen radiation and nuclear safety infrastructures in countries of the former USSR. Very considerable extrabudgetary funds are expected, including one cost-free expert. There is expected to be a large increase in the number of TC projects, owing to major emphasis being given to education and training in accordance with a resolution of the General Conference.

H/11. The review, revision and updating where necessary of all radiation safety documents to ensure consistency with the Basic Safety Standards and with ICRP recommendations will be continued. Liaison activities with other United Nations bodies and international organizations working in radiation safety will be continued.

H/12. A fundamental requirement for effective radiation safety practices in any country is a proper radiation safety infrastructure, covering appropriate basic legislation, regulations and codes of practice, the necessary inspection and enforcement bodies, the education and training of professionals and the implementation of current principles of safety and radiation protection. An integrated strategy using, in a harmonized and co-ordinated manner, CRPs, fellowship training courses and workshops, and specialized post-graduate courses, will be established to strengthen radiation safety infrastructures in Member States. Five educational courses and two seminars to promote education and training in radiation protection and nuclear safety will be implemented. It is expected that the volume of TC activities will increase to meet the needs of new Member States.

H/13. A major focus will be the development of radiation safety infrastructures in the new countries of the former USSR under the joint IAEA/UNDP initiative launched in 1993.

H/14. An additional high priority activity would provide for extra specialized courses in the various official languages of the Agency in accordance with GC(XXXVII)/1067.

Subprogramme H.2

Occupational Radiation Protection

Main Accomplishments (1991-94)

H/15. Three Safety Series publications were prepared: Dosimetric Requirements for External Monitoring; Health Surveillance of Persons Occupationally Exposed to Ionizing Radiation; and Assessment and Treatment of External and Internal Accidental Radionuclide Contamination. Two documents were completed for the Technical Reports Series: Calibration of Radiation Protection Monitoring Instruments; and Medical Preparedness for Radiological Accidents.

H/16. Agency staff prepared reports on three occupational accidents involving radiation exposures leading to fatalities.

H/17. A full scale international intercomparison of the new ICRU operational quantities was successfully conducted through a CRP, resulting in publication of an IAEA-TECDOC. The IAEA collaborated with the CEC and the United States Department of Energy in conducting the first international intercomparison of criticality accident dosimeters for nearly twenty years.

H/18. Two interregional training courses and two regional courses were organized on occupational radiation protection.

Main Activities Planned for 1995-96

H/19. Regular budget funds for this subprogramme have had to be reduced to compensate for increases in other activities. As a result, the project on providing guidance on radiation protection in mining has to be phased out and only part of it has been regrouped with other projects. While the amount allocated to the assessment and treatment of radiation effects has also had to be decreased, relatively larger sums have been allocated to the work on optimizing radiation protection of the public and monitoring of individual workers and controlled areas, mainly in connection with CRPs. It is expected that the number of TC projects will remain at the same level.

H/20. The major part of the activities under this subprogramme will be directed at the development of guidance on the design, implementation and management of occupational radiation protection programmes consistent with the new Basic Safety Standards. This guidance will cover effective monitoring of the work environment and dose assessment of workers and should help promote optimization of protection.

H/21. A second area of emphasis will be the provision of practical guidance to occupationally exposed workers and radiation protection specialists through the expansion of the series of Practical Guidance Modules and Technical Modules on basic radiation protection methods and techniques. The documents will cover basic terminology and radiation units, concepts and techniques for occupational radiation monitoring, and guidance for the occupational physician.

H/22. In preparing for the decommissioning of an increasing number of ageing nuclear power plants, mines and other facilities, the Agency will work in co-operation with the ILO to develop guidance specifically aimed at occupational protection for the large work forces expected to be involved. This activity complements work under subprogramme C.3.

H/23. Two Practical Technical Modules will be prepared to assist with the diagnosis and treatment of radiation injuries; these should be helpful to occupational physicians. They will be complemented by a growing database on radiation accidents and resulting injuries. A new CRP will investigate the reliability of radioepidemiology assessments for radiation protection purposes.

H/24. The Agency will continue to develop and maintain databases relevant to occupational protection. These will include continued co-operation with the OECD/NEA in the expansion of a database on occupational exposure statistics in nuclear power plants.

H/25. It is proposed that as an additional high priority activity the work on radiation protection in mining be restarted. The main thrust, however, would be shifted to the provision of advisory services to developing Member States with mining activities. This work forms part of the review services described in para. B/11.

Subprogramme H.3

Radiation Protection of the Public and the Environment

Main Accomplishments (1991-94)

H/26. A technical document on the application of source related dose constraints for members of the public was issued as an interim report that sets out the basis for the Agency's policy in this area for the process of drafting the Basic Safety Standards. The document was revised and upgraded to a Safety Guide after the receipt of Member State comments and in parallel with the publication of the final version of the Basic Safety Standards.

H/27. A strategic review has been performed of all guidance on criteria for controlling radioactive releases to the environment. Objectives have been set for future work under this subprogramme. A revision of Safety Series No. 57 on Generic Models for Predicting Doses to Members of the Public from Routine Releases was completed.

H/28. Important steps have been taken to harmonize intervention levels after nuclear and radiation accidents. An interim technical document was published on generic intervention levels; this developed further the principles set out in the revision of Safety Series No. 72 and the recommendations of the ICRP. The document was subsequently upgraded to a Safety Guide on

the basis of the comments received. The principal achievement was the development of a single set of generic intervention levels that have application to a wide range of accidents, thereby helping to alleviate the psychological and social problems that can arise from having conflicting international guidance. A technical publication replacing Safety Series No. 81 considers the calculations and data needed for developing the operational intervention levels that are specified in emergency plans and that can assist in decision making on protective actions after an accident. A technical report on agricultural countermeasures for use after a nuclear accident has been produced.

H/29. The joint CEC/WMO/IAEA Atmospheric Transport Model Evaluation Study (ATMES) was successfully concluded and the results published in 1992. The European Tracer Experiment (ETEX) programme was initiated as an international follow-up to ATMES in order to validate the predictive capabilities of long range atmospheric transport models.

H/30. Two documents related to monitoring were finalized for publication: Monitoring for Radiation Protection of the Public and Practical Guidance for Radioactive Effluent Monitoring in Nuclear Facilities.

H/31. The CRP on the validation of environmental model predictions (VAMP) ended in 1994. Four technical documents on the results of model validation exercises for human dose assessment in the urban environment were published. These complement documents covering terrestrial and aquatic transfer and multiple pathway dose assessment models. The VAMP programme has proved to be a useful forum for information exchange, model testing and improvement, and training.

H/32. Two other tasks were launched in 1993: the compilation of environmental monitoring data with the aim of building up a picture of global contamination and local problem areas; and experimental research on radionuclide transfer parameters for tropical and subtropical environments.

H/33. Two CRPs relating to radon in the human environment — on instrumentation, modelling, dosimetry and surveys, and on risk assessment — have been completed, providing results on global radon surveys in the domestic environment and at work places. Two global radon intercomparison exercises conducted jointly with the US Environmental Protection Agency (EPA) involved all the Member States participating in the CRPs. A co-ordinated programme on quality assurance in radon measurements was completed and has helped the international intercomparability of data. The database on radon measurements was further developed in order to produce the first worldwide database (available to Member States) on levels of radon, thoron and their progeny.

H/34. The results of the International Chernobyl Project were published in 1991. A broadsheet summary of the results was produced in 1992 and has proved popular.

H/35. Co-operation and co-ordination with other agencies and international bodies have been strengthened through the Office of the United Nations Co-ordinator of International Co-operation for Chernobyl. In particular, staff have attended a WHO workshop on the reconstruction of thyroid doses, and a CRP on the measurement of ^{129}I in the contaminated regions of Belarus, Ukraine and Russia has been instigated. This work will help establish a coherent picture of the

early pattern of contamination, which is essential if the inconsistencies in the reports of excess child thyroid cancers in Belarus are to be understood and their cause explained.

H/36. Through a project funded via the Office of the United Nations Co-ordinator of International Co-operation for Chernobyl, and jointly with the FAO/IAEA Joint Division, the manufacture, distribution and administration of caesium binders in the form of slow release boli has been achieved in the three affected Republics. The boli, which are administered to cattle, reduce the concentration of caesium in milk and meat by a factor of three or more over a three month period. The technique is extremely cost effective. In Belarus, for instance, it is estimated that for an equivalent cost of some $5 000, some $30 million worth of production is saved per year. The technique also allows farmers in the affected areas to re-establish their traditional farming methods, with marked social and psychological benefits.

Main Activities Planned for 1995-96

H/37. The previous subprogramme H.8 (the radiological consequences of the Chernobyl accident) has been integrated into this subprogramme. A significant decrease in the regular budget resources has had to be introduced to compensate for other increases. As a result, the project on assessing radiological impacts on the environment has been phased out and a large reduction introduced into the work on the assessment and control of radon exposure. Considerable extrabudgetary resources are expected for the Chernobyl project, including cost-free experts. There will be some increase in the number of TC projects.

H/38. The coverage of this subprogramme has been redefined to include all support and guidance for radiation safety of the public. Following the review of existing guidance, several tasks are planned to address the control of artificial radioactive material dispersed into the environment. Guidance on the practical application of global and regional source-dose related constraints will be developed further, supported by the collection of information from Member States on currently recommended limits for various sources and practices. This guidance will be augmented by a publication describing a simple methodology for setting limits for non-nuclear power installations.

H/39. Cleanup criteria for use following a nuclear accident will be developed in association with the nuclear fuel cycle programme, the aim being to develop simple criteria that can have some generic application.

H/40. A Safety Guide will be published to describe in more detail the application of the relevant sections of the Basic Safety Standards to radiation safety of the public.

H/41. Work will continue in collaboration with UNSCEAR and WHO to collect, review and develop an information resource on the human radiation environment. CRPs will continue on "reference man" other than Caucasian man for dosimetric purposes and on radionuclide transfer in tropical and subtropical environments. A symposium on the environmental impact of radiation releases will be organized; an important component will be the results of the VAMP programme.

H/42. Work will be continued to evaluate the retrospective dosimetry of Chernobyl decontamination workers and evacuees, and to review and update radiation protection conditions for the population in affected areas. One CRP will allow for the retrospective assessment of thyroid doses through the measurement of ^{129}I and another will deal with the use of the electron spin resonance technique for the assessment of the cumulative dose to the population.

H/43. A new CRP is planned on techniques to reduce exposure to radon in the human environment, based on the results obtained from global radon surveys and including assessment of the public exposure to radon in homes and workplaces other than underground mines. The completion of practical safety guidance on the control and reduction of radon levels in the human environment, with emphasis on occupational exposure to radon, thoron and their daughters, is planned as the main activity for this period. The worldwide database on radon measurements is planned to be completely developed for continuing utilization by Member States.

H/44. The developments in this area of public protection will additionally be summarized and published in a form that is readily comprehensible to non-technical groups.

H/45. It is proposed as an additional high priority activity that increased work be done on the assessment of radiological impacts. In particular, a comprehensive project would be implemented on the assessment of the iodine contamination from the Chernobyl accident.

Subprogramme H.4

Safe Transport of Radioactive Material

Main Accomplishments (1991-94)

H/46. Considerable progress was made with the new major revision of the Agency's Regulations for the Safe Transport of Radioactive Material (Safety Series No. 6) and its companion documents (Safety Series Nos 7, 37 and 80), which are scheduled for publication in 1996. More than 400 proposals for amendments were considered in three revision panel meetings.

H/47. The issue of air transport of radioactive material in large quantities or with high activity was thoroughly reviewed. An analysis of accident statistics for aircraft demonstrated that the impact forces exerted on a package in an aircraft crash constitute a more severe accident environment than is likely to be encountered in accidents in land modes of transport. It was recognized that the regulatory performance standards for Type B packages could not ensure that such a package would retain its contents in as high a proportion of all aircraft accidents as for other modes of transport. A broad consensus on more stringent requirements for air transport of radioactive material in large quantities or high activity has now been achieved. Details of the work so far were published in 1993 in an IAEA-TECDOC.

H/48. In close co-operation with the IMO, a Joint Working Group on the Safe Carriage of Irradiated Nuclear Fuel by Sea was established to consider all activities in which the transport of nuclear material falls under the responsibilities of two or more organizations. In a later stage, UNEP also participated in the Joint Working Group. The Group recommended that the three organizations adopt a draft code of practice for the safe carriage of irradiated nuclear fuel, plutonium and high level radioactive wastes on board ships. The Group further considered a number of issues related to accidents at sea, accident statistics, risk studies and emergency response. It was concluded that all the available information demonstrates very low levels of radiological risk and environmental consequences from the sea transport of radioactive material.

H/49. The PACKTRAM database containing the competent authority approval certificates for package design and shipments has been published annually as an IAEA-TECDOC. Currently, 21 Member States are actively participating in producing the database.

H/50. A survey among IAEA Member States on the implementation of the Agency's Transport Regulations was conducted and the results published in an IAEA-TECDOC. Of the 64 countries which responded, 59 (92%) had directly or indirectly through mode-specific agreements implemented the IAEA Transport Regulations, and the vast majority had used the latest edition of these Regulations. Eleven Member States expressed the need for further training in the subject area.

Main Activities Planned for 1995-96

H/51. The overall changes in the regular budget resources for this subprogramme for the two years are not large. Some extrabudgetary resources, representing one cost-free expert, should be available. There will probably be an increase in TC projects.

H/52. A continuing part of the Agency's work under this subprogramme will involve the revision of the Regulations for the Safe Transport of Radioactive Material (and the supporting documents) in the light of the Agency's new Basic Safety Standards and of technological developments. There will be a continuing shift in emphasis (introduced in 1993-94) from an almost exclusive orientation on the development and maintenance of the Agency's Transport Regulations to increased assistance to Member States and international organizations in the implementation of the Regulations.

H/53. A major effort will be directed to the retention of the multimodal nature of the Agency's Transport Regulations, as far as practicable.

H/54. A direct consequence of the recommendations made by the Joint IAEA/IMO/UNEP Working Group on the Safe Carriage of Irradiated Nuclear Fuel by Sea is the initiation of a CRP on the severity of accidents at sea during the transport of radioactive material.

H/55. As a follow-up of the survey on the implementation of the Agency's Transport Regulations it is planned to create a mechanism to hold peer reviews in Member States on a voluntary basis to assist national competent authorities in their task to ensure compliance with the Regulations and to encourage the implementation of the Regulations in essentially the same way in all Member States.

H/56. As recommended by SAGSTRAM and supported by the responses by Member States to a questionnaire, increased emphasis will be placed on training. Special attention will be directed to the newly emerged Member States in the eastern part of Europe.

H/57. Following a recommendation by SAGSTRAM, it is proposed that as an additional high priority activity a service be provided to advise Member States on the implementation of the Transport Regulations.

Subprogramme H.5

Emergency Preparedness

Main Accomplishments (1991-94)

H/58. The Agency continued to maintain its Emergency Response System (ERS) to fulfil its obligations under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. The ERS has been developed into an integrated response structure utilizing the capabilities and expertise of the Agency and several other international organizations. It is capable of responding rapidly and efficiently. Several exercises to test and evaluate the system were conducted and the lessons learned have been used to improve the system. A publication entitled Guidance on International Exchange of Information and Data Following a Major Accident or Radiological Emergency provides for a standard formatted structure for exchanging information and data during a response to a nuclear accident. As a complement to that publication, the Agency, in co-operation with the CEC, has developed personal computer based software to encode and decode such formatted information and data and has distributed it to Member States.

H/59. The revised versions of Safety Series Nos 72 and 81, together with the new Basic Safety Standards, provide a coherent and consistent set of principles for emergency planning and preparedness. In addition, a Safety Series publication dealing with emergency planning for the re-entry of nuclear powered satellites has been issued, together with a model national emergency plan for radiological emergencies aimed primarily, but not exclusively, at countries without nuclear power plants.

H/60. A 1992 Review Conference on the Convention on the Physical Protection of Nuclear Material unanimously affirmed that the Convention provides a sound basis for physical protection during international transport and is acceptable in its current form. The final statement of the Review Conference called on the Agency to organize a meeting to re-examine INFCIRC/225/Rev.2. As a result, a revised INFCIRC was published and provided to Member States.

H/61. Extensive work with a number of developing countries, through various TC projects, has significantly improved their links with the Agency's ERS. This will be important in the notification and response to a nuclear accident or radiological emergency. In addition, several interregional training courses on various aspects of emergency planning and preparedness were held, as was one regional workshop on national requirements for infrastructures related to emergency planning and preparedness.

Main Activities Planned for 1995-96

H/62. There will be an increase in regular budget resources — allocated to the work on radiological emergency strategies with an emphasis on guidance material. The number of TC projects is expected to increase.

H/63. Many of the Agency's documents relating to emergency planning, preparedness and response will be reviewed and updated, in particular to take account of the experience obtained

from accidents and to ensure consistency. In addition, consideration will be given to providing new guidance in this area.

H/64. The Agency will continue to operate, maintain and upgrade its Emergency Response System (ERS) in connection with its obligations under the Early Notification and Assistance Conventions. Emergency response procedures and guidelines for Member States related to the ERS will be reviewed and updated, and close links will be maintained with organizations involved in the operation of other emergency response systems. It is planned to assist Member States by providing, on request, emergency review teams which would review national, on-site and off-site emergency plans and procedures and participate in the planning, conduct and evaluation of emergency exercises.

H/65. An additional high priority activity would involve the upgrading of the communications and computer facilities available to the Emergency Response Unit to enable it to better serve its purpose as an operating centre for the ERS.

Subprogramme H.6

Safety of Radiation Sources

Main Accomplishments (1991-94)

H/66. Most of the Safety Standards, Safety Guides and other documents originally planned in 1989 have been completed. The documents deal with efficiency in the implementation of safety regulations. They include eight practical safety manuals specifically directed to those who actually handle radiation sources, reports on accidents with irradiators, a Safety Guide on irradiation facilities, five volumes on radiation protection in hospitals jointly prepared by CEC/IAEA/ILO/PAHO/WHO, and a review of radiological accidents with radiation sources and the lessons learned from them. A research programme on dose reduction in diagnostic radiology has also been carried out. From 1993 onwards, emphasis is being given to the practical implementation of the Agency's guidelines in Member States, with six regional training courses (three on the regulation and safe use of radiation sources and three specifically on radiation protection in hospitals), as well as assistance in national training courses worldwide.

H/67. A training manual on the safety and regulation of radiation sources forms part of the assistance to Member States to help them achieve self-sufficiency in this area. A video film on the safety of industrial irradiators has been produced.

Main Activities Planned for 1995-96

H/68. The considerable increase in regular budget resources is for the only remaining project, related to the design, control and safe use of radiation sources. The project on PSA techniques has been phased out. There will probably be an increase in the number of TC projects. Some extrabudgetary funds are expected to be available.

H/69. It is planned to continue to foster the improvement of the safe use of radiation sources by establishing safety guidelines and training strategies and formulating recommendations for improving the design and use of sources and protecting devices. Much effort will be put into assisting Member States in the implementation of these guidelines and recommendations by producing simplified guidance on the administrative control of radiation sources as well as supporting documents related to evaluation and inspection. In addition, CRPs on radiation protection in diagnostic radiology will be started. The review of radiological accidents in medicine and industry started within the period 1993-94 will be continued and extended to provide recommendations based on the lessons learned.

H/70. The increase of resources in this subprogramme is small and it is proposed as an additional high priority activity that a regular technical service be established for advising developing Member States on the regulatory control of radiation sources.

Subprogramme H.7

Radiation Safety Services

Main Accomplishments (1991-94)

H/71. Through RAPAT missions and associated activities, such as regional projects and workshops, the Agency has assisted developing countries in strengthening their radiation protection capabilities. The RAPAT follow-up programme was expanded to include group training in various aspects of radiation protection. On the basis of assessments made by RAPAT missions, priorities for regional activities were identified.

H/72. Personnel monitoring and other services (e.g. in-house training) were provided to meet internal Agency needs (personnel from the Department of Safeguards and the Seibersdorf and Monaco Laboratories) and assistance was given to several developing countries which do not yet have monitoring systems. Also, such services were provided on a regular basis to TC experts classified as workers occupationally exposed to ionizing radiation. Field assistance was given within the framework of Agency activities in Iraq (UN Security Council Resolution 687).

Main Activities Planned for 1995-96

H/73. There will be an increase in the regular budget resources, relating to provisions for Radiation Protection Advisory Team (RAPAT) services and their follow-up. It is also expected that there will be a considerable increase in the extent of TC projects.

H/74. The principal activities under this subprogramme will continue to be the provision of RAPAT services to developing countries in order to carry out systematic assessments of national radiation protection infrastructures and to formulate recommendations for the strengthening of such systems. The number of such missions will remain at between 6 and 8 a year. RAPAT follow-up activities will be given special attention, and continuous monitoring of improvements of radiation protection practices in developing countries will be performed. Priorities will be given to those activities that are preconditions for the safe transfer of technologies involving exposure to ionizing radiation.

H/75. Personal monitoring services will continue to be provided for Agency staff and for TC experts occupationally exposed to radiation. Radiation protection services for less developed Member States will be increased during the period under consideration. Field assistance will continue to be provided upon request; the relevant equipment will be updated to meet current international standards.

H/76. The Agency considers that in the appraisal of TC requests it has an obligation under the Statute and under the mandate of the Board of Governors to determine compliance with the Basic Safety Standards. Such a determination is a condition for continuing assistance under existing TC projects and a precondition to the approval of future requests. The Agency will therefore help improve marginal radiation protection programmes in Member States that are recipients of technical assistance and where the minimum requirements are not met. The project will augment existing resources in such Member States, including those provided through the TC programme, to take the necessary actions to comply with the health and safety requirements of the Agency.

H/77. The Agency's Radiation Protection Laboratory provides a continuous backup to the full Programme H, and in particular to ad hoc radiation protection missions carried out by the Agency. It also serves as a reference point for practical training of technicians from developing Member States. The laboratory equipment has become obsolescent over the years owing to a lack of financial resources. An additional high priority activity would involve the upgrading of this equipment.

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS

I/1. The regular budget resources for this programme show a slight decrease, but this almost steady state budgeting situation does not reflect current expectations on forthcoming Agency responsibilities in the area of nuclear safety. There will probably be an overall increase in TC commitments.

I/2. The Agency has promoted the drafting of an international nuclear safety convention that would be mandatory for States ratifying it. A draft, limited for the time being to nuclear power plants, has already been developed; it is hoped that a text can be adopted in 1994. Not only would such a convention establish a basic international frame of reference and review procedures for the first time, without seeking in any way to infringe upon national responsibilities, but it would also help to strengthen public opinion that governments and the nuclear community are fully cognizant of the international safety responsibilities they bear. An important feature would be an obligation of the parties to report at agreed intervals to a meeting of Contracting Parties on the national application of the principles laid down in the convention. The Agency will convene, prepare and service the meetings of the contracting parties and transmit to them relevant information. The contracting parties may request the Agency to provide other services Although the parties to the convention may bear the financial burden it could involve an expansion of some activities.

I/3. The Agency's activities in nuclear safety are related to the development of norms and to provisions for facilitating their implementation, including the fostering of information exchange, and to the collection and analysis of data, advice and services in specific situations. The emphasis in the programme, however, will continue to shift from establishing standards of safety to providing for the application of the standards.

I/4. Major efforts are being made by authorities and experts in countries of the former USSR and in eastern and central European countries to upgrade the safety of nuclear installations. The activities of the Agency will continue to focus on the implementation of consistent international safety assessments of various Soviet designed nuclear power plants and the elaboration of recommendations for upgrading their level of safety.

I/5. The services of Operational Safety Review Team (OSART) and Assessment of Safety Significant Events Team (ASSET) missions will continue to be rendered to Member States on request and are expected to be effective in assisting them in the enhancement of safe plant operation.

I/6. The International Nuclear Event Scale (INES) is now used in many countries to rate nuclear incidents. A related information system through which INES national officers in 50 Member States are provided with timely information was made operational. A test period has been started for the use of the scale for events in facilities other than nuclear power plants.

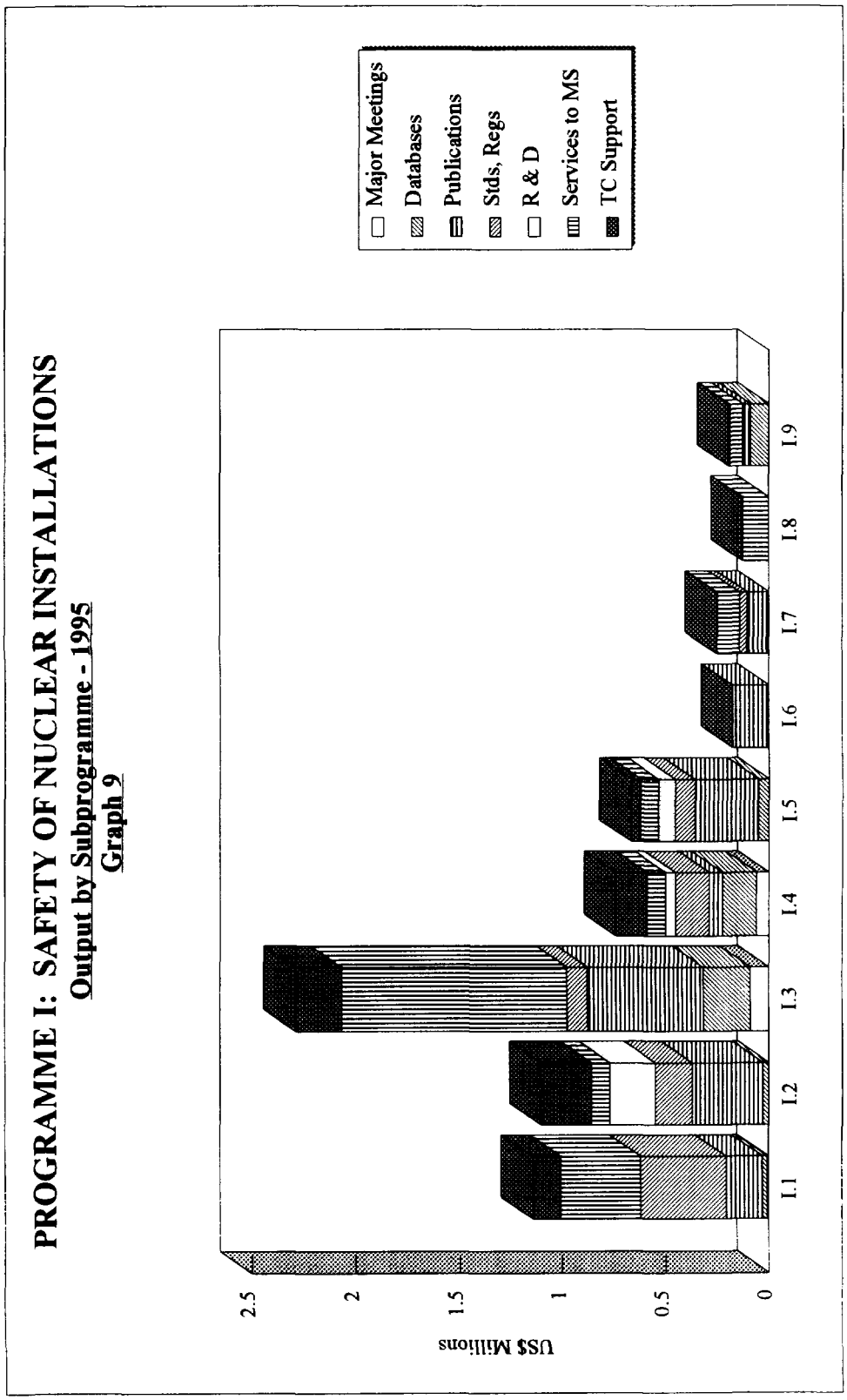
I/7. The provision of cost-free experts by Member States and temporary assistance under the regular budget are important for the nuclear safety programme.

I/8. The structure of the subprogrammes has been modified to some extent from that in 1993-94. The 1995-96 budget places major emphasis on the development of safety culture, the enhancement of operational safety, operating experience feedback and nuclear safety assessment practices.

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
Summary of Regular Budget estimates by subprogramme
Table 35

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
I.1	Strengthening Basic Nuclear Safety	NENS	1 040 000	44 000	4.2	1 084 000	(8 000)	(0.7)	1 076 000	5.4	1 143 000	4.1	1 182 000
	Additional high-priority activities		–	100 000	–	100 000	–	–	100 000	5.4	105 000	4.1	109 000
I.2	Engineering Safety Issues of Nuclear Power Plants (Merged with old I.5)	NENS	890 000	161 000	18.1	1 051 000	(74 000)	(7.0)	977 000	5.0	1 104 000	4.0	1 068 000
I.3	Operational Safety of Nuclear Power Plants (Merged with old I.4)	NENS	2 138 000	31 000	1.5	2 169 000	(43 000)	(2.0)	2 126 000	5.6	2 290 000	4.1	2 339 000
I.4	Research Reactor Safety (Old I.6)	NENS	700 000	3 000	0.4	703 000	43 000	6.1	746 000	5.4	741 000	3.9	816 000
	Additional high-priority activities		–	50 000	–	50 000	50 000	100.0	100 000	5.4	53 000	3.9	109 000
I.5	Nuclear Safety Assessment Practices (Old I.7)	NENS	777 000	(146 000)	(18.8)	631 000	53 000	8.4	684 000	5.7	667 000	3.9	749 000
	Additional high-priority activities		–	50 000	–	50 000	–	–	50 000	5.7	53 000	3.9	55 000
I.6	Safety Approaches to Future Nuclear Power Plants (Old I.8)	NENS	168 000	(2 000)	(1.2)	166 000	22 000	13.3	188 000	5.4	175 000	4.5	207 000
I.7	Safety Reassessment of Nuclear Power Plants (Old I.9)	NENS	337 000	(97 000)	(28.8)	240 000	58 000	24.2	298 000	5.4	253 000	3.8	326 000
I.8	Safety Appraisals of Facilities Established Under Project Agreements with the Agency (Old I.10)	NENS	209 000	(88 000)	(42.1)	121 000	17 000	14.1	138 000	4.1	126 000	4.9	151 000
I.9	Communication with the Public (Old I.11)	NENS	155 000	29 000	18.7	184 000	–	–	184 000	5.4	194 000	4.6	203 000
	Programme I – Safety of Nuclear Installations		6 414 000	(65 000)	(1.0)	6 349 000	68 000	1.1	6 417 000	5.4	6 693 000	4.1	7 041 000
	Additional high-priority activities		–	200 000	–	200 000	50 000	25.0	250 000	5.5	211 000	3.8	273 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.


PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
Output by Subprogramme - 1995
Graph 9
Major Meetings
Databases
Publications
Stds, Regs
R & D
Services to MS
TC Support
US$ Millions
0
0.5
1
1.5
2
2.5
I.1
I.2
I.3
I.4
I.5
I.6
I.7
I.8
I.9

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
Summary of Regular Budget Estimates by Project
Table 36

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
I.1.	Strengthening Basic Nuclear Safety													
I.1.01	Harmonization Nuclear Safety Standards and Practices	Cont.	NENS	426 000	23 000	5.4	449 000	(15 000)	(3.3)	434 000	5.4	473 000	4.1	476 000
	Additional high-priority activities			–	100 000	–	100 000	–	–	100 000	5.4	105 000	4.1	109 000
I.1.02	Strengthening of Regulatory Bodies	Cont.	NENS	614 000	(121 000)	(19.7)	493 000	(13 000)	(2.6)	480 000	5.4	520 000	4.1	528 000
I.1.03	Safety Culture (New Project)	1997	NENS	–	142 000	–	142 000	20 000	14.1	162 000	5.4	150 000	4.1	178 000
	Sub – total I.1.			1 040 000	44 000	4.2	1 084 000	(8 000)	(0.7)	1 076 000	5.4	1 143 000	4.1	1 182 000
	Additional high-priority activities			–	100 000	–	100 000	–	–	100 000	5.4	105 000	4.1	109 000
I.2.	Engineering Safety Issues of Nuclear Power Plants													
I.2.01	Engineering Aspects of Site Safety	Cont.	NENS	215 000	(42 000)	(19.5)	173 000	(11 000)	(6.4)	162 000	5.0	182 000	4.0	177 000
I.2.02	Analysis, Management and Mitigation of Accidents (Combination of Old I.2.02 and I.5.01)	1998	NENS	208 000	33 000	15.9	241 000	6 000	2.5	247 000	5.0	254 000	4.0	270 000
I.2.03	Safety Aspects of Ageing	1998	NENS	193 000	33 000	17.1	226 000	(56 000)	(24.8)	170 000	5.0	237 000	4.0	186 000
I.2.04	Fire Safety	1998	NENS	110 000	(17 000)	(15.5)	93 000	(2 000)	(2.2)	91 000	5.0	98 000	4.0	99 000
I.2.05	Safety Related Software (New Project)	1998	NENS	–	109 000	–	109 000	(22 000)	(20.2)	87 000	5.0	114 000	4.0	95 000
I.2.06	Engineering Safety Review Services (ESRS) (Old I.4.03)	Cont.	NENS	164 000	45 000	27.4	209 000	11 000	5.3	220 000	5.0	219 000	4.0	241 000
	Sub – total I.2.			890 000	161 000	18.1	1 051 000	(74 000)	(7.0)	977 000	5.0	1 104 000	4.0	1 068 000

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
Summary of Regular Budget Estimates by Project
Table 36 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
I.3.	Operational Safety of Nuclear Power Plants													
I.3.01	Operational Safety Guidance (Combination of Old I.3.01, I.3.02 and I.3.05)	Cont.	NENS	272 000	16 000	5.9	288 000	(66 000)	(22.9)	222 000	5.6	304 000	4.1	244 000
I.3.02	Incident Reporting System (IRS): Collection and Systematic Analysis of Safety Relevant Events (Combination of Old I.3.03 and I.3.04)	Cont.	NENS	529 000	(30 000)	(5.7)	499 000	7 000	1.4	506 000	5.6	527 000	4.1	557 000
I.3.03	Operational Safety Review Team (OSART) Services (Old I.4.01)	Cont.	NENS	958 000	24 000	2.5	982 000	8 000	0.8	990 000	5.6	1 037 000	4.1	1 089 000
I.3.04	Assessment of Safety Significant Events Team (ASSET) Services (Old I.4.02)	Cont.	NENS	379 000	21 000	5.5	400 000	8 000	2.0	408 000	5.6	422 000	4.4	449 000
	Sub-total – I.3.			2 138 000	31 000	1.5	2 169 000	(43 000)	(2.0)	2 126 000	5.6	2 290 000	4.1	2 339 000
I.4.	Research Reactor Safety													
I.4.01	Development of Safety Guidance for Research Reactors (Old I.6.01)	1998	NENS	186 000	20 000	10.8	206 000	40 000	19.4	246 000	5.4	217 000	3.9	269 000
I.4.02	Integrated Safety Assessment of Research Reactors (INSARR) Services (Old I.6.02)	Cont.	NENS	346 000	(33 000)	(9.5)	313 000	19 000	6.1	332 000	5.4	330 000	3.9	363 000
	Additional high-priority activities			–	50 000	–	50 000	50 000	100.0	100 000	5.4	53 000	3.9	109 000
I.4.03	Incident Reporting System for Research Reactors (IRSRR): Collection and Systematic Analysis of Safety Relevant Events (Old I.6.03)	Cont.	NENS	168 000	16 000	9.5	184 000	(16 000)	(8.7)	168 000	5.4	194 000	3.9	184 000
	Sub-total I.4.			700 000	3 000	0.4	703 000	43 000	6.1	746 000	5.4	741 000	3.9	816 000
	Additional high-priority activities			–	*50 000*	–	*50 000*	*50 000*	*100.0*	*100 000*	*5.4*	*53 000*	*3.9*	*109 000*

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
Summary of Regular Budget Estimates by Project
Table 36 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
I.5.	Nuclear Safety Assessment Practices													
I.5.01	Probabilistic Safety Assessments (Old I.7.01)	Cont.	NENS	393 000	(115 000)	(29.3)	278 000	14 000	5.0	292 000	5.7	294 000	3.9	320 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	5.7	53 000	3.9	55 000
I.5.02	Assessment of Human Factors and Man-machine Interface (Combination of Old I.7.02 and I.7.03)	1998	NENS	272 000	(53 000)	(19.5)	219 000	(13 000)	(5.9)	206 000	5.7	231 000	3.9	226 000
I.5.03	Nuclear Safety Systems Reliability (Old I.7.04)	Cont.	NENS	112 000	22 000	19.6	134 000	52 000	38.8	186 000	5.7	142 000	3.9	203 000
	Sub-total I.5.			777 000	(146 000)	(18.8)	631 000	53 000	8.4	684 000	5.7	667 000	3.9	749 000
	Additional high-priority activities			–	50 000	–	50 000	–	–	50 000	5.7	53 000	3.9	55 000
I.6.	Safety Approaches to Future Nuclear Power Plants													
I.6 01	Safety Approaches to Future Nuclear Power Plants (Old I.8.01)	2000	NENS	168 000	(2 000)	(1.2)	166 000	22 000	13.3	188 000	5.4	175 000	4.5	207 000
I.7.	Safety Reassessment of Nuclear Power Plants													
I.7.01	Development of a Common Basis for Judging the Safety of Nuclear Power Plants Built to Earlier Standards (Old I.9.01)	1996	NENS	96 000	(20 000)	(20.8)	76 000	47 000	61.8	123 000	5.4	80 000	3.8	135 000
I.7.02	Assisting in the Review of Plants Built to Earlier Standards (Other than those listed under I.7.03) (Old I.9.02)	Cont.	NENS	106 000	(29 000)	(27.4)	77 000	11 000	14.3	88 000	5.4	81 000	3.8	96 000
I.7.03	Safety of WWER and RBMK Plants (Old I.9.03)	Cont.	NENS	135 000	(48 000)	(35.6)	87 000	–	–	87 000	5.4	92 000	3.8	95 000
	Sub-total I.7.			337 000	(97 000)	(28.8)	240 000	58 000	24.2	298 000	5.4	253 000	3.8	326 000

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
Summary of Regular Budget Estimates by Project
Table 36 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
I.8.	Safety Appraisals of Facilities Established Under Project Agreements with the Agency													
I.8.01	Safety Appraisals of Facilities Established Under Project Agreements with the Agency (Old I.10.01)	Cont.	NENS	209 000	(88 000)	(42.1)	121 000	17 000	14.1	138 000	4.1	126 000	4.9	151 000
I.9.	Communication with the Public													
I.9.01	International Nuclear Event Scale (INES) (Old I.11.01)	Cont.	NENS	155 000	29 000	18.7	184 000	–	–	184 000	5.4	194 000	4.6	203 000
Programme I – Safety of Nuclear Installations				6 414 000	(65 000)	(1.0)	6 349 000	68 000	1.1	6 417 000	5.4	6 693 000	4.1	7 041 000
	Additional high-priority activities			–	200 000	–	200 000	50 000	25.0	250 000	5.5	211 000	3.8	273 000

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
List of projects and estimated total resources for 1995 and 1996
Table 37

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a/
I.1.	Strengthening Basic Nuclear Safety										
I.1.01	Harmonization Nuclear Safety Standards and Practices	Cont.	NENS	1.7	1.2	473 000	97 000	185 000	476 000	97 000	195 000
	Additional high-priority activities			–	–	105 000	–	–	109 000	–	–
I.1.02	Strengthening of Regulatory Bodies	Cont.	NENS	1.8	2.3	520 000	97 000	650 000	528 000	97 000	650 000
I.1.03	Safety Culture (New Project)	1997	NENS	0.5	0.3	150 000	–	115 000	178 000	–	120 000
	Sub – total I.1.			4.0	3.8	1 143 000	194 000	950 000	1 182 000	194 000	965 000
	Additional high-priority activities			–	–	105 000	–	–	109 000	–	–
I.2.	Engineering Safety Issues of Nuclear Power Plants										
I.2.01	Engineering Aspects of Site Safety	Cont.	NENS	0.7	0.2	182 000	50 000	600 000	177 000	50 000	600 000
I.2.02	Analysis, Management and Mitigation of Accidents (Combination of Old I.2.02 and I.5.01)	1998	NENS	1.2	–	254 000	–	800 000	270 000	–	850 000
I.2.03	Safety Aspects of Ageing	1998	NENS	0.7	0.3	237 000	–	100 000	186 000	–	110 000
I.2.04	Fire Safety	1998	NENS	0.4	0.2	98 000	–	100 000	99 000	–	110 000
I.2.05	Safety Related Software (New Project)	1998	NENS	0.5	0.2	114 000	–	50 000	95 000	–	50 000
I.2.06	Engineering Safety Review Services (ESRS) (Old I.4.03)	Cont.	NENS	1.3	0.2	219 000	–	–	241 000	–	–
	Sub – total I.2.			4.8	1.1	1 104 000	50 000	1 650 000	1 068 000	50 000	1 720 000
I.3.	Operational Safety of Nuclear Power Plants										
I.3.01	Operational Safety Guidance (Combination of Old I.3.01, I.3.02 and I.3.05)	Cont.	NENS	1.1	0.5	304 000	–	–	244 000	–	–
I.3.02	Incident Reporting System (IRS): Collection and Systematic Analysis of Safety Relevant Events (Combination of Old I.3.03 and I.3.04)	Cont.	NENS	1.7	0.9	527 000	–	–	557 000	–	–
I.3.03	Operational Safety Review Team (OSART) Services (Old I.4.01)	Cont.	NENS	4.8	3.3	1 037 000	260 000	450 000	1 089 000	260 000	450 000
I.3.04	Assessment of Safety Significant Events Team (ASSET) Services (Old I.4.02)	Cont.	NENS	1.0	1.0	422 000	65 000	450 000	449 000	65 000	450 000
	Sub-total – I.3.			8.6	5.7	2 290 000	325 000	900 000	2 339 000	325 000	900 000
I.4.	Research Reactor Safety										
I.4.01	Development of Safety Guidance for Research Reactors (Old I.6.01)	1998	NENS	1.1	0.7	217 000	–	300 000	269 000	–	350 000
I.4.02	Integrated Safety Assessment of Research Reactors (INSARR) Services (Old I.6.02)	Cont.	NENS	1.4	1.0	330 000	–	150 000	363 000	–	150 000
	Additional high-priority activities			–	–	53 000	–	–	109 000	–	–
I.4.03	Incident Reporting System for Research Reactors (IRSRR): Collection and Systematic Analysis of Safety Relevant Events (Old I.6.03)	Cont.	NENS	0.6	0.4	194 000	–	–	184 000	–	–
	Sub-total I.4.			3.1	2.1	741 000	–	450 000	816 000	–	500 000
	Additional high-priority activities			–	–	53 000	–	–	109 000	–	–

PROGRAMME I: SAFETY OF NUCLEAR INSTALLATIONS
List of projects and estimated total resources for 1995 and 1996
Table 37 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF a_/	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF a_/
I.5	Nuclear Safety Assessment Practices										
I.5.01	Probabilistic Safety Assessments (Old I 7.01)	Cont	NENS	0 7	0 5	294 000	–	800 000	320 000	–	800 000
	Additional high-priority activities			–	–	53 000	–	–	55 000	–	–
I.5.02	Assessment of Human Factors and Man-machine Interface (Combination of Old I.7 02 and I.7.03)	1998	NENS	0.7	0.7	231 000	–	–	226 000	–	–
I.5.03	Nuclear Safety Systems Reliability (Old I.7 04)	Cont.	NENS	0.8	–	142 000	–	–	203 000	–	–
	Sub-total I.5			2.2	1.2	667 000	–	800 000	749 000	–	800 000
	Additional high-priority activities			–	–	53 000	–	–	55 000	–	–
I.6.	Safety Approaches to Future Nuclear Power Plants										
I.6 01	Safety Approaches to Future Nuclear Power Plants (Old I.8.01)	2000	NENS	0 8	0.5	175 000	–	–	207 000	–	–
I.7.	Safety Reassessment of Nuclear Power Plants										
I 7.01	Development of a Common Basis for Judging the Safety of Nuclear Power Plants Built to Earlier Standards (Old I.9.01)	1996	NENS	0.2	0.2	80 000	–	–	135 000	–	–
I.7.02	Assisting in the Review of Plants Built to Earlier Standards (Other than those listed under I.7 03) (Old I.9.02)	Cont.	NENS	0.3	0.3	81 000	–	–	96 000	–	–
I 7.03	Safety of WWER and RBMK Plants (Old I.9.03)	Cont.	NENS	0.5	0.5	92 000	2 600 000	200 000	95 000	1 250 000	1 250 000
	Sub-total I.7			1.0	1.0	253 000	2 600 000	200 000	326 000	1 250 000	1 250 000
I.8.	Safety Appraisals of Facilities Established Under Project Agreements with the Agency										
I 8.01	Safety Appraisals of Facilities Established Under Project Agreements with the Agency (Old I.10.01)	Cont	NENS	0.6	0.4	126 000	–	–	151 000	–	–
I.9	Communication with the Public										
I.9.01	International Nuclear Event Scale (INES) (Old I.11.01)	Cont.	NENS	0.6	0.3	194 000	65 000	150 000	203 000	65 000	150 000
Programme I – Safety of Nuclear Installations				25.7	16.1	6 693 000	3 234 000	5 100 000	7 041 000	1 884 000	6 285 000
	Additional high-priority activities			–	–	211 000	–	–	273 000	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable All amounts are initial and tentative estimates.
Note. Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme I.1

Strengthening Basic Nuclear Safety

Main Accomplishments (1991-94)

I/9. At the start of its third term (commencing in September 1992) INSAG selected three priority topics for consideration: the development of a common process for judging the acceptability of continued operation of existing plants; defence in depth for current and future reactors; and derivation of a consistent approach to potential radiation exposure in all nuclear activities. Reports on each of the three topics are being prepared.

I/10. Work on the development of an international nuclear safety convention continued through the meetings of the expert group. In 1993 INSAG prepared a report on the proposed basic concepts and peer review mechanism for consideration by the expert group.

I/11. The updating of NUSS documents to reflect current safety approaches continued with the revision and publication of one Safety Guide and the publication of a new Safety Guide on the periodic safety review of nuclear power plants. A report on the safety of nuclear installations was published in 1993 in the Safety Fundamentals category of the Safety Series. In addition, the development of three Safety Practices and a Technical Report on related topics was completed during the period.

I/12. In the nuclear safety regulatory area, peer discussion groups comprising three to four regulatory bodies continued. The International Regulatory Review Teams (IRRT) programme was established in 1990 to review regulatory practices and organizations in Member States. Guidelines for IRRT have been prepared and two missions were conducted.

Main Activities Planned for 1995-96

I/13. There is an overall increase in the level of regular budget resources. Although there is a reduction in the financial resources assigned to the project on strengthening of regulatory infrastructures, the real level of activity in this field will increase: this is the result mainly of the introduction of a new project on safety culture. There is also an increase for work on harmonization of standards and practices. Extrabudgetary resources for a cost free expert are expected to be available for both the harmonization of nuclear safety standards and practices and for the strengthening of regulatory bodies.

I/14. INSAG will continue to play a leading role in examining current nuclear safety issues with a view to recommending commonly shared safety principles and objectives. The work of NUSSAG in co-ordinating the development and revision of NUSS documents will continue.

I/15. The main focus of attention of this subprogramme will shift to the improvement of national nuclear safety infrastructures, in particular regulatory systems, by identifying good practices and structures and providing assistance with their implementation. At the request of Member States, International Regulatory Review Team (IRRT) reviews will be conducted. The implementation of the safety culture concept will be another priority and an Assessment of Safety Culture in Organizations Team (ASCOT) service will continue.

I/16. An additional high priority activity would permit an increased number of full committee meetings for INSAG and also working group meetings. The preparation of new publications would thereby be expedited.

Subprogramme I.2

Engineering Safety Issues of Nuclear Power Plants

Main Accomplishments (1991-94)

I/17. Two Safety Guides were revised and published: Earthquakes and Associated Topics in Relation to Nuclear Power Plant Siting (No. 50-SG-S1) and Seismic Design and Qualification of Nuclear Power Plants (No. 50-SG-D15, originally No. 50-SG-S2). The revision of External Man Induced Events in Relation to Nuclear Power Plant Design (No. 50-SG-D5) was finalized. An IAEA-TECDOC on PSA for seismic events was completed.

I/18. An increasing number of site/seismic review services to Member States have been organized. In addition, many national and one regional training course were organized on topics related to safety in relation to external events and nuclear power plant siting. Agency involvement in tackling seismic problems in existing nuclear facilities was further extended.

I/19. The main focus of attention was the needs of east European and developing countries for information and guidance on the application of complex computer codes for accident analysis and the design review of operating and new plants. An IAEA-TECDOC on guidelines on containment performance analysis is being finalized. A Technical Reports Series publication has been published on reactivity accidents (No. 354). A CRP on validation of accident analysis methodology has been initiated. National, regional and interregional training courses have been held.

I/20. A guidebook on the management of accidents in nuclear power plants was completed and published in the Technical Reports Series. Two CRPs on severe accident management and on containment behaviour were completed and the results published. As a continuation of the work on the guidebook, a technical document on the development of accident management procedures and guidance was produced. A series of national training courses on accident management were held at the request of a number of Member States, as were the second and third interregional training courses on the subject.

I/21. A Safety Practice document on the Implementation and Review of Ageing Management Programmes for Nuclear Power Plants was completed in 1993. Four CRPs on the management of ageing of representative plant components (reactor pressure vessel primary nozzles, motor operated valves, concrete containment buildings and instrumentation and control cables) were initiated.

I/22. Development work was started on a guidance document on the assessment of safety margins and the residual life of major nuclear power plant components.

I/23. Fire safety is the subject of a new project which commenced in 1993. In the period 1993-94, the tasks were focused mainly on the development of a Safety Guide. In the course of the development of this Guide, a Safety Practice document on guidelines for inspection of fire protection and fire fighting techniques was drafted and submitted for publication. Another Safety Practice (Guidelines for Evaluation of Fire Hazard Analysis) was drafted and reviewed for publication in 1994. Fire safety aspects were investigated during a special mission to the Zaporozhe plant in Ukraine and ASSET missions to Bulgaria and the Russian Federation.

I/24. A report dealing with software important to safety in nuclear power plants was completed in 1993 for publication in the Technical Reports Series.

I/25. By the end of 1994 more than 30 Engineering Safety Review Services missions will have been organized at the request of Member States, covering siting reviews (including seismic and other external events) and reviews of specific aspects of design (including structures).

I/26. In 1993 ESRS missions to review safety aspects of the ageing management programmes were initiated at the request of Member States and by the end of 1994 four such missions will have been carried out.

I/27. Ten training workshops on accident procedures have been conducted within the framework of the ESRS.

Main Activities Planned for 1995-96

I/28. The previous subprogramme I.5 on the management and mitigation of accidents in nuclear power plants has been amalgamated with this subprogramme. The regular budget resources for this subprogramme are increased, owing in particular to resources allocated to the new project on safety related software and an increase for Engineering Safety Review Services (ESRS). Extrabudgetary resources are expected for research contracts in connection with engineering aspects of site safety.

I/29. Activities under this subprogramme will concentrate on five main subjects: site safety, safety and accident analysis evaluation, safety aspects of nuclear power plant ageing, fire safety and software important to safety in nuclear power plants.

I/30. The work on seismic and other external events that would affect the safety of nuclear facilities will continue to respond to Member State requests. A CRP on a benchmark study of the seismic safety of existing WWER type nuclear power plants will start producing results and will provide for an exchange of information amongst Member States. A questionnaire will be sent to Member States to collect information on site related data and design bases in order to develop a database on this topic. A Safety Series document will be developed on volcanic hazards in relation to nuclear power plant siting.

I/31. Another focus of activity will be the provision of assistance to developing countries on safety and accident analysis methodology, including validation and training in the use of relevant computer codes. It is also planned to review accident analyses and evaluation methodologies and experience obtained with computer codes for safety analysis. The CRP on accident analysis methodology should be completed in 1996.

I/32. Following the recommendations of an Advisory Group in 1992 as well as proposals by and trends in Member States, activities will continue on the validation and verification of accident management plans and especially on procedures and guidance to help prevent severe accidents and mitigate their consequences.

I/33. With regard to the safety aspects of ageing, the emphasis will continue to be on supporting Member States in maintaining required safety margins over the plant lifetime by developing relevant guidance and promoting and assisting the application of this guidance. Specific products will include guidance documents on: assessment of safety margins and the residual life of plant components; the effectiveness of methods for the detection and monitoring of age related degradation; safety based priority settings for ageing management activities; and the management of ageing in the design of future plants. Implementation of this guidance will be promoted through training courses and supported by advisory missions. Effective methods for monitoring and mitigating age related degradation of four representative plant components will be identified and developed through existing CRPs.

I/34. It is planned to complete the Safety Guide on fire safety inspection of nuclear power plants by the end of 1995. This will form the technical basis for conducting missions on the assessment of fire safety. Guidelines for carrying out the missions will be developed. A Safety Guide on fire risk analysis using PSA techniques will be started. A database will be established to facilitate the exchange of information between Member States on advances in fire safety. Assessment of Fire Safety Teams and/or advisory missions will be sent to Member States upon request to help improve the fire safety of nuclear power plants. Training courses will be conducted to assist Member States in understanding and implementing the Agency's guidance on fire safety.

I/35. Studies will be conducted through a CRP on unresolved issues connected with safety related software engineering. Lessons learned from the licensing of software based safety systems will be analysed and a Safety Guide on software important to safety in nuclear power plants will be prepared.

I/36. It is intended, mainly with the support of TC funding, to send ESRS missions upon request to nuclear installations to promote compliance with internationally accepted standards, guidelines and practices. The ESRS will cover siting reviews (including seismic and other external events), age related degradation and the effectiveness of ageing management programmes, fire safety evaluation, safety related software and accident management.

Subprogramme I.3

Operational Safety of Nuclear Power Plants

Main Accomplishments (1991-94)

I/37. A Safety Guide on the Periodic Safety Review of Operational Nuclear Power Plants was completed in 1993. It supplements Safety Fundamentals: The Safety of Nuclear Installations, and the Code on the Safety of Nuclear Power Plants: Operation. It gives guidance on the conduct of periodic safety reviews, which provide the means for determining necessary or worthwhile

changes aimed at maintaining a high level of plant safety and harmonizing the safety of older plants with that of modern plants.

I/38. The Agency's PSA applications programme continued with the development and publication of methodology documents and the organization of topical meetings as well as interregional, regional and specific national training courses. Case studies on the use of PSA for the optimization of technical specifications and for risk focused maintenance were prepared. The role of PSA in the regulatory process was discussed at a specialists meeting in 1993 and a document describing the general concepts of risk based regulation was prepared and published. A PSAPACK users' group was established and principles for future improvements of the code were established.

I/39. Guidelines on the use of plant specific safety indicators to permit utilities to monitor the safety of different hierarchial levels (top management, departmental management, working level) were developed and published. A draft technical report on indicators for regulatory use was prepared.

I/40. The Incident Reporting System (IRS) has been operating in conjunction with the OECD/NEA since 1993 and the number of IRS reports now exceeds 2000, constituting a valuable store of operational experience. Significant improvements in the operation of the database allow full treatment of numerical and graphical information. Recommendations have been made on a methodology for topical analysis of events. New initiatives have resulted in the publication of a compendium of actions taken at the national level in response to events reported to the IRS and summaries of national practices in the area of feedback of operational experience.

I/41. A total of 30 missions will have been carried out under the OSART programme by the end of 1994, comprising OSART, pre-OSART, Technical Exchange and Safety Review missions, with the same number of preparatory meetings to provide guidance to the regulatory authorities, utilities and plants. From 12 to 18 months after an OSART mission, follow-up visits have been made to determine the status of the response to recommendations. By the end of 1994, some 20 follow-up visits will have been carried out. These visits show that the OSART programme continues to identify operational issues and that nuclear power plant operators are making worthwhile improvements in operational safety. The style of official reports of missions has been changed to give greater emphasis to the results and to make them available to a wider audience.

I/42. Technical documents were published on revised OSART Guidelines, OSART Good Practices, OSART Mission Highlights and supplementary guidance on reviewing Operational Experience Feedback and Reactor Engineering and Fuel Handling. In 1994 it is expected that an edition of Pre-OSART Mission Highlights will be published and that the next edition of OSART Mission Highlights will cover all types of missions and include the good practices.

I/43. The second biennial technical meeting of OSART users was held in 1991 and in the four year period the OSART programme and its methodology were reviewed by INSAG and by a consultants meeting. Improvements recommended by these groups have been implemented.

I/44. A total of 74 Assessment of Safety Significant Events Teams (ASSET) missions will have been carried out by the end of 1994. This number includes review missions, follow-up missions and seminars, as well as ASSET missions concentrating on the root cause of a single safety significant event and implementation missions. Seminars on ASSET root cause analysis

methodology covered about 40% of all ASSET missions. More Member States have requested ASSET seminars prior to a review mission in combination with the preparatory meeting for the mission. The number of follow-up missions grew to about 10% of the total number.

I/45. Consultants meetings were convened to evaluate and assess the findings of ASSET missions to specific reactors, such as those of the RBMK type.

Main Activities Planned for 1995-96

I/46. This subprogramme should be considered in connection with subprogramme A.2, where the emphasis is on plant availability and performance.

I/47. The new subprogramme I.3 consists of the former I.3 (Operational safety of nuclear power plants) and I.4 (Safety review services to nuclear power plants). The regular budget resources will remain at essentially the same level though there are some shifts between projects. In particular, there are increases for work in connection with ASSET. Several cost-free experts are expected to be available.

I/48. Emphasis will be placed on promoting harmonized safety standards and practices in selected areas of operational safety, equipment qualification, periodic safety reviews and backfitting, by facilitating the exchange of information, including information on incidents, developing guidelines and supporting Member States in the application of these guidelines through training courses and advisory missions and rendering assessment services on operational safety to Member States.

I/49. Work will focus on finalizing methodology documents on PSA applications to improve operational safety. The use of PSA to optimize maintenance and outage of safety equipment will receive special attention, and a Safety Series document on the use of PSA in the regulatory process will be published. Issues related to living PSA and its potential uses will be addressed.

I/50. The programme on safety indicators will focus on finalizing the Safety Practice document on indicators for regulatory use and for monitoring the effectiveness of safety programmes.

I/51. The IRS service will be continued in close co-operation with OECD/NEA. The IRS database will be strengthened by computer support to improve the collection, evaluation and dissemination of nuclear power plant events together with the development of files and subsidiary databases for specific applications. Guidance based on internationally accepted methods of systematic event analysis will be prepared. In addition, the use and analysis of IRS information in the ASSET and ASCOT programmes will be reinforced.

I/52. An important component of the project will be the provision of OSART services to plants under construction, under commissioning and in operation. The number of missions carried out is dependent upon requests from Member States and there is room to accept requests at a greater rate than those received in 1992-93. Each mission will be preceded by a preparatory meeting and completed by a follow-up visit. Guidance material and summary reports will be published routinely and the OSART programme will again be reviewed to ensure that the service remains valuable to Member States.

I/53. The ASSET services offered under this subprogramme are expected to be requested by Member States at the level of 15 to 18 missions yearly. Annual workshops will review ASSET findings to draw generic conclusions regarding the effectiveness of the management of incident prevention, and assess the results of specific reactor types to provide input for other Agency services. ASSET documentation, in particular the ASSET guidelines, will be revised and updated.

Subprogramme I.4

Research Reactor Safety

Main Accomplishments (1991-94)

I/54. Safety Standards on design and operation were published under the research reactor safety programme (RRSP) at the end of 1992. The publication of two Safety Guides — one on safety assessment and safety analysis reports and one on utilization and modification — was delayed to 1993 in order to submit the drafts to Member States for comments. Drafts exist for all the anticipated safety publications under RRSP. These include: a Safety Guide on commissioning; a Safety Practice on operational limits and conditions; and an IAEA-TECDOC on the management of research reactor ageing, to be published in 1994. Drafts of a Safety Guide on emergency planning, of four Safety Practices documents on instrumentation and control, on radiation protection services, on maintenance and on operating procedures, and of two IAEA-TECDOCs on guidelines for safety evaluations and on experience with accidents, are at different levels of completion.

I/55. The findings of the last CRP on data acquisition for research reactor PSA studies were published as IAEA-TECDOCs in 1992 and 1994. Two regional training courses on safe operation and regulatory supervision and on safety documentation and an interregional training course on operational safety were conducted during 1991 and 1992. A regional seminar on ageing, refurbishment and/or decommissioning of research reactors was held in 1992.

I/56. Safety missions to research reactors under agreements with the Agency and Integrated Safety Assessment of Research Reactors (INSARR) missions had visited 16 reactors in 13 Member States by mid-1993.

I/57. A consultants meeting was held to set up an incident reporting system for research reactors (IRSRR). Improvements made to the existing database of the Agency's IRS for power reactors will allow it to be used for both systems. It is planned to put the system on trial for a period of two years prior to its use in Member States.

Main Activities Planned for 1995-96

I/58. There is essentially no change in the regular budget resources for this subprogramme in 1995, although some shifts occur between projects.

I/59. It is planned to complete by the end of 1996 the comprehensive set of Safety Standards and Guides formally outlined in 1989. The Safety Standards, Safety Guides and Safety Practices will be supplemented by three IAEA-TECDOCs addressing key safety issues, namely ageing, safety reviews and operational experience with accidents. These issues will also be addressed through a CRP on NDT and ISI for research reactors to be completed in 1997.

I/60. Safety Practice publications on the selection and training of operating personnel and on source term and radiological impact analysis will be produced. In addition, the preparation of a glossary of terms for research reactors will be completed. The existing IAEA-TECDOCs on siting and on external event design will be upgraded to Safety Practices.

I/61. It is expected that by 1995 the Incident Reporting System for Research Reactors (INSRR) will be fully operational on the basis of a trial period which will allow for final refinements and for extending its use to as many Member States and operator groups as possible.

I/62. Training activities for 1995-96 will address mainly the arrangements for licensing and the preparation of safety documentation for licensing and safe operation purposes.

I/63. Safety and Integrated Safety Assessment of Research Reactors (INSARR) missions (4-6 a year) will be conducted to assist Member States in evaluating the operational safety of their research reactors. Other types of safety reviews, such as peer reviews and reviews of the regulatory framework, will also be offered.

I/64. With the continuing ageing of research reactors, a high level of requests for missions is expected in this area. The increase in regular budget funding is modest and may not suffice. It is therefore proposed as an additional high priority activity to provide for an increase in INSARR services.

Subprogramme I.5

Nuclear Safety Assessment Practices

Main accomplishments (1991-94)

I/65. Some 15 International Peer Review Service (IPERS) missions to review PSAs at various stages of completion will have been carried out by the end of 1994. In addition to reviews of Level 1 PSAs, Member States have requested a review of Level 2 PSAs, PSAs on shutdown risks and specific PSA studies such as the analysis of external events. Work has been started to extend the IPERS guideline documents accordingly.

I/66. The basic PSA procedures guides have been complemented with guideline documents on modelling of human error, common cause failures, external events and shutdown states. Work has progressed on the development of Level 2 and Level 3 PSA guidelines, the latter using the experience of co-operation with OECD/NEA on an intercomparison modelling exercise with teams in various Member States.

I/67. In the field of human factors, several topical studies were conducted in co-operation with the OECD/NEA. Generic lessons were drawn from the IRS reports and operating experience concerning safety culture, maintenance work, outage planning and problems related to the management of subcontractors.

I/68. Technical documents were published on expert systems in the nuclear industry and on the potential of knowledge-based systems in nuclear installations; both documents resulted from meetings/workshops at which expert system prototypes were demonstrated and reviewed. An Advisory Group drafted guidelines for the development and use of computerized operator support systems in nuclear installations; these are to be issued as a Safety Practices publication.

I/69. Two documents were prepared dealing with the reliability and safety assessment of computerized safety systems.

I/70. A document on guidelines for the implementation of a multipurpose data collection system was prepared and published. The use of diagnostic systems to monitor equipment degradation was discussed at two topical meetings and reports were published. The Agency's reliability database was consolidated and expanded to include data on common cause and passive component failure rates.

Main Activities Planned for 1995-96

I/71. A considerable reduction in regular budget resources for this subprogramme has had to be introduced to compensate for increases in other higher priority areas. The reduction mainly relates to activities in PSA and the assessment of human factors and the man-machine interface.

I/72. Work will focus on finalizing the set of PSA guidelines, with emphasis on Level-2 and Level-3 PSAs. Upon request by Member States, some five International Peer Review Service (IPERS) missions per year will be conducted to assist Member States in the review of PSAs. The IPERS guidelines will be extended to include the new demands of Member States and an annual report on the mission findings will be prepared.

I/73. The work in the field of human factors will focus on the collection of human reliability data through a CRP. The data are primarily intended for use in PSAs.

I/74. Work on the man-machine interface will continue to focus on the safety assessment of computerized operator support systems and expert systems used for enhancing the capability of operators to diagnose a situation and take appropriate action. Guidelines will be prepared for the assessment of man-machine interface designs.

I/75. Work will continue on enhancing the reliability database. A status report on safety regulations for maintenance activities at nuclear power plants will be prepared. A CRP on the development of methods and approaches to optimize surveillance testing and maintenance of safety equipment will be initiated.

I/76. The work on PSA has had to be reduced to compensate for other increases in the safety programme. However, it is expected that activities related to this technique will actually increase. It is therefore proposed as an additional high priority activity to restore at least part of the PSA work that has had to be phased out.

Subprogramme I.6

Safety Approaches to Future Nuclear Power Plants

Main Accomplishments (1991-94)

I/77. Work on the safety aspects of future nuclear plants started in 1991-92. An IAEA-TECDOC on safety aspects of designs for future light water reactors (evolutionary reactors) was published in 1993. The main focus of activities was the implementation of General Conference resolutions on developing safety principles for the design of future nuclear power plants. An IAEA-TECDOC was prepared on this subject and was reviewed by INSAG. A technical document on accident prevention and mitigation in future plants was prepared. A symposium on advanced nuclear power systems which gave special attention to design and safety objectives for future nuclear power plants was held in 1993.

Main Activities Planned for 1995-96

I/78. There is no significant change in the regular budget resources.

I/79. The activities under this subprogramme will be aimed at promoting a broad exchange of information among Member States on safety aspects of future nuclear power plants in order to assist in the harmonized development of safety approaches. In particular, the main activity will be the fostering of information exchange on safety objectives and principles for the design of future nuclear power plants. Of special concern will be the defence in depth concept for future nuclear power plants on the basis of the work being carried out by INSAG. Another important area will be severe accidents and how they should affect the design of future nuclear power plants. (The implementation of the safety objectives and principles for the design of future nuclear power plants are dealt with under subprogramme A.3).

Subprogramme I.7

Safety Reassessment of Nuclear Power Plants

Main Accomplishments (1991-94)

I/80. On the basis of experience in the extrabudgetary programme on the safety of WWER 440 model 230 nuclear power plants, the Agency started to develop a common basis on which an acceptable level of safety of all operating nuclear power plants built to earlier standards could be judged. The International Conference on the Safety of Nuclear Power: Strategy for the Future, held in September 1991, first addressed this issue and the following sessions of the General Conference requested the Agency to initiate the process. A common procedure will be completed in 1994 and will comprise a general policy (which is under consideration by INSAG) as well as a practical approach by means of expert judgement on a case by case basis.

I/81. Within the framework of the extrabudgetary programme on the safety of older reactors, follow-up safety review missions, ASSETs and seismic missions have been carried out to first generation WWER 440/230 plants to review progress in the resolution of previously identified safety issues. Reports on topical safety issues (such as reactor pressure vessel embrittlement, the application of the leak before break concept, instrumentation and control, fire hazard analysis and improvement of the confinement function) have been prepared to consolidate existing knowledge and to identify areas where further investigations are required. Topical meetings on these subjects have also been organized for the exchange of information and to reach international consensus on the actions needed. Training workshops have been organized to exchange experience in areas such as safety inspection, risk based prioritization, accident management, emergency preparedness and preventive maintenance. Assistance in performing and reviewing safety studies, particularly PSA, has been provided.

I/82. In addition to reviewing the safety of first generation WWERs, the Agency started a programme on RBMK safety in 1992. The programme aims at reviewing safety modifications implemented and proposed and achieving international consensus on priority actions. Meetings were held in 1992 and in 1993, and a plant specific review meeting was conducted at Smolensk Unit 3. ASSET missions have been conducted to all RBMKs. An initial prioritization was proposed on the basis of Agency investigations in 1993.

I/83. It was recommended by an Advisory Group in 1992 that the programme be extended to other more modern WWERs, i.e. WWER 440/213 and WWER 1000 plants. The Agency's programme for these plants complements national and bilateral programmes. It focuses on the resolution of topical safety issues and assistance to operating organizations and regulatory authorities to enhance the safety of plants under construction and in operation. Activities carried out included a comparison of Russian codes with Agency NUSS documents and topical meetings on safety issues. Safety issues have been identified and prioritized on the basis of results of national and multilateral studies and safety review missions (such as to Zaporozhe). A benchmark study on seismic safety was carried out under a CRP. Expert missions have been arranged to plant sites to provide guidance on the resolution of operational matters such as preventive maintenance and fire safety.

I/84. The Agency has participated in the G-24 co-ordination as a special technical advisor for identifying priorities and providing technical recommendations to enhance the safety of plants in eastern Europe and the countries of the former USSR. Advice has been given to the CEC and the EBRD for setting priorities to upgrade plants in Kozloduy, Novovoronezh and Ignalina. This advice used insights from a technical database covering the issues identified for each plant and the status of safety improvements. The database was also used by operators and regulators in the Member States concerned in decision making on safety matters as well as by organizations providing technical and financial support for improving plant safety. The Agency has also contributed to the development, updating and quality assurance of the G-24 project database.

Main Activities Planned for 1995-96

I/85. A reduction in regular budget resources has been introduced and spread between the projects, in spite of an expected increase in the level of activities. Such an increase is expected to be supported by very significant extrabudgetary funds and a considerable number of cost-free experts.

I/86. A main objective of this subprogramme is to assist Member States by case studies and workshops in the validation and application of criteria for reassessing the acceptability of the safety level of nuclear power plants built to earlier standards. A Safety Guide and a Safety Practice document as well as a number of technical documents will be published in order to assist Member States in the evaluation of such plants. Two to three missions a year will be carried out to Member States.

I/87. The activities will focus on establishing priorities for safety improvements, assisting in the review of proposed modifications and developing international consensus on selected topical safety issues.

I/88. As far as WWER and RBMK reactors are concerned, the Extrabudgetary Programme will continue its assistance to Member States by providing nuclear safety services, producing technical reviews and publishing technical and documents specific to these reactors. The overall objective is to consolidate the results of the Agency's investigation and those of other national, bilateral and multilateral activities and to establish international consensus on priority safety improvements and the adequacy of proposed solutions. The planned activities also include workshops to facilitate the exchange of information on safety matters related to nuclear power plant operation.

Subprogramme I.8

Safety Appraisals of Facilities Established Under Project Agreements with the Agency

Main Accomplishments (1991-94)

I/89. By the end of 1994, a database of Agency project facilities will have been established and a draft process elaborated for appraising the safety of facilities.

Main Activities Planned for 1995-96

I/90. There is a decrease in the level of resources for this subprogramme.

I/91. The appraisal process will be implemented through the medium of health and safety missions (5 per year) and guidelines for appraisal activities will be developed.

Subprogramme I.9

Communication with the Public

Main Accomplishments (1991-94)

I/92. The International Nuclear Event Scale (INES), introduced in 1992, continued to be internationally recognized as applicable to any nuclear event that may occur either at a nuclear power plant or at other nuclear facilities, and many more Member States have nominated INES national officers. The safety concept conveyed by this scale is considered to be a major step towards achieving a common understanding of plant operational safety. Through the INES information system, authoritative information is promptly disseminated on nuclear events. In 1992, an INES Advisory Committee was established to provide on request technical advice to the INES co-ordinator and INES national officers to ensure consistent application of the User's Manual.

I/93. The INES User's Manual has been revised and translated into Russian, French and Spanish.

Main Activities Planned for 1995-96

I/94. There is an increase in regular budget resources allocated to this subprogramme. Some funds are expected to be available from extrabudgetary resources.

I/95. The main feature of this subprogramme will continue to be the operation of the INES information system, whose aim will be to facilitate the rapid communication of information on nuclear events to the general public through the timely receipt of information and its dissemination to INES national officers. The proposed increase in the budget for this subprogramme relates to the extension of INES to nuclear installations other than power plants. Guidance will be provided on the use of the scale and an annual review will be made of the use of the system on the basis of feedback received from the media, regulators and operators.

I/96. Training in the form of seminars will be offered to assist national officers in instructing co-ordinators at each facility.

MAJOR PROGRAMME 4

SAFEGUARDS

MAJOR PROGRAMME 4
SAFEGUARDS
Summary of total resources by programme
Table 38

	Programme / Major Programme		1995 Staffing P	1995 Staffing GS	1995 Regular Budget estimates	1995 Funds from other UN organizations	1995 Other extra-budgetary resources	1995 TACF	1996 Regular Budget estimates	1996 Funds from other UN organizations	1996 Other extra-budgetary resources	1996 TACF
J.	Safeguards	SG	284.0	204.0	72 422 000	–	5 000 000	–	75 448 000	–	5 000 000	–
	Additional high-priority activities		–	–	8 005 000	–	–	–	–	–	–	–
		Lapsed	11.0	5.0								
	Sub-total Safeguards		295.0	209.0								
		RIAL	6.2	23.4								
	Major Programme 4		301.2	232.4	72 422 000	–	5 000 000	–	75 448 000	–	5 000 000	–
	Additional high-priority activities		–	–	8 005 000	–	–	–	–	–	–	–

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME J: SAFEGUARDS

J/1. The programme is directed at international verification and confirmation of the compliance of Member States with their commitments to use nuclear energy for peaceful purposes. While the purpose of safeguards is to verify compliance with safeguards undertakings, the technical aim is the timely detection of diversion of significant quantities of nuclear material to non-peaceful applications, or misuse of nuclear facilities, specified equipment and non-nuclear material subject to safeguards.

J/2. The continued objective of the programme in 1995 and 1996 is to apply the Agency's safeguards system efficiently on the basis of bilateral and multilateral agreements. Work will continue on the development of safeguards implementation techniques and approaches suitable for new, large scale, complex nuclear facilities. Much of this development work will be carried out by Member States in consultation with the Agency. Following General Conference Resolution GC(XXXVII)/RES/619, the programme will continue to focus on the development and implementation of new approaches that will strengthen the Agency's ability to respond to the demand for a more effective and cost-efficient safeguards system covering all nuclear material in all peaceful nuclear activities in States with comprehensive safeguards agreements.

J/3. To accomplish the purpose and to attain its objectives, a regular budget allocation of $72 745 000 is foreseen for the Safeguards Programme for 1995. This amount represents no increase over the 1994 regular budget and is required mainly for the following:

(1) The application of safeguards activities at facilities presently under safeguards and at those scheduled to come under safeguards, and the concomitant annual increase of about 10% in the quantities of nuclear material subject to Agency safeguards;

(2) Further development in the implementation of safeguards in States that were part of the former USSR;

(3) The projected activities under a comprehensive safeguards agreement concluded between Argentina, Brazil, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) and the Agency; and

(4) The replacement of obsolete or irreparable safeguards instruments and equipment.

The additional costs foreseen for (2) and (3) above will be met mainly through a reduction in costs for the implementation of safeguards in EURATOM States.

J/4. In view of the uncertainties presently prevailing with respect to the safeguards approaches that may be developed, the budget does not attempt to anticipate the financial implications of changes that may be identified under Project J.2.12 concerning work on strengthening the effectiveness and improving the efficiency of the safeguards system.

J/5. The actual costs of a safeguards system for a large reprocessing plant in Japan (Project J.2.02) are difficult to forecast. There is general agreement on how safeguards will be applied but no precise estimates for individual cost elements. Included in the regular budget are staff,

travel and equipment expenditures of $1.5 million during the 1995 development phase. Current planning figures for capital investment derive from plant construction information provided by the Government of Japan and the Japanese Nuclear Fuel Company Ltd (JNFL). The revision to earlier estimates is attributable to a scheduled delay foreseen by JNFL of approximately 1 to 1.5 years. An estimate of $5 321 000 has been made for the Agency share of capital expenses in 1996 in conjunction with the implementation of safeguards at JNFL. This estimate represents 50% of the total cost anticipated, which reflects an expected 50/50 sharing arrangement with the Government of Japan for joint use of equipment and facilities by both Agency and Japanese national inspectors. The estimated costs expected to be borne by the Agency do not include costs for permanent structures, although there will be substantial costs in connection with the inspectors' centre and the on-site analytical laboratory. The Agency estimates do not foresee construction costs or rental fees. The overall costs for safeguards implementation will continue beyond 1996 through the construction and commissioning period. Under current zero growth budget conditions, the significant safeguards costs of this project cannot be absorbed in the regular budget. Nevertheless, funds will have to be provided for this project as the Agency has a requirement to safeguard this facility.

J/6. Finally, it should be noted that no budget allocation has been made for new developments which may require additional resources to cover activities such as unilateral offers to place military stockpiles of plutonium under Agency safeguards or the proposal to establish a multilateral agreement on the cut-off of weapons grade nuclear material production and its verification by the Agency.

J/7. For 1995, the regular budget covers the expected staff and travel costs required for the planned routine verification activities and their day to day support. Additional high priority requirements have also been identified to address known resource requirements as indicated under subprogrammes J.1 and J.2. These include equipment, training and services as well as provision for an expanded capacity for the Department of Safeguards in relation to its new responsibilities. Furthermore, under subprogrammes S.2.1 (External Relations), S.2.2 (Legal Services) and S.5.1 (Public Information) additional high priority needs are identified, attributable to the Agency's expanded verification responsibilities. Indeed, these needs are already apparent in regard to the new agreements being negotiated and the discussions currently under way relating to possible new initiatives.

J/8. For 1996, the regular budget has also been held at 1994 levels. However, this does not reflect the already known additional demands for safeguards related activities in the Agency (as noted above). Moreover, it has not been possible to make any estimates of the full resources which will need to be obtained from other sources as additional high priority requirements. In part, these requirements will be determined by decisions taken in the light of the work under subprogramme J.2 on strengthening the effectiveness and improving the efficiency of the safeguards system. The requirements will need also to take account of the developments identified in paragraph J/6 above. Accordingly, the Secretariat will at a later stage make proposals in relation to anticipated resource requirements in 1996 and the method for their funding.

PROGRAMME J: SAFEGUARDS
Summary of Regular Budget estimates by subprogramme
Table 39

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.1	Safeguards Operations												
	Operations A, B and C	SGOP	38 887 000	705 000	1.8	39 592 000	355 000	0.9	39 947 000	6.6	42 202 000	4.2	44 369 000
	Additional high-priority activities		–	1 060 000	–	1 060 000	(1 060 000)	(100.0)	–	3.9	1 101 000	–	–
	Development and Technical Support	SGDE/ RIAL	8 402 000	48 000	0.6	8 450 000	(50 000)	(0.6)	8 400 000	4.5	8 829 000	4.0	9 129 000
	Additional high-priority activities		–	3 510 000	–	3 510 000	(3 510 000)	(100.0)	–	2.9	3 612 000	–	–
	Safeguards Information Treatment	SGIT	4 770 000	(6 000)	(0.1)	4 764 000	46 000	1.0	4 810 000	5.0	5 002 000	4.2	5 263 000
	Additional high-priority activities		–	250 000	–	250 000	(250 000)	(100)	–	3.2	258 000	–	–
	Sub-total J.1		52 059 000	747 000	1.4	52 806 000	351 000	0.7	53 157 000	6.1	56 033 000	4.2	58 761 000
	Additional high-priority activities		–	4 820 000	–	4 820 000	(4 820 000)	(100.0)	–	3.1	4 971 000	–	–
J.2	Safeguards Support and Development												
	Operations A, B and C	SGOP	1 630 000	(173 000)	(10.6)	1 457 000	(355 000)	(24.4)	1 102 000	5.4	1 535 000	3.9	1 201 000
	Development and Technical Support	SGDE	3 574 000	(48 000)	(1.3)	3 526 000	–	–	3 526 000	5.5	3 718 000	4.2	3 875 000
	Additional high-priority activities		543 000	1 027 000	189.1	1 570 000	(1 570 000)	(100.0)	–	3.5	1 625 000	–	–
	Safeguards Information Treatment	SGIT	4 155 000	(248 000)	(6.0)	3 907 000	(46 000)	(1.2)	3 861 000	5.5	4 123 000	4.2	4 246 000
	Additional high-priority activities		–	900 000	–	900 000	(900 000)	(100.0)	–	2.9	926 000	–	–
	Concepts and Planning	SGCP	4 724 000	(284 000)	(6.0)	4 440 000	50 000	1.1	4 490 000	6.5	4 728 000	4.3	4 983 000
	Additional high-priority activities		–	106 000	–	106 000	(106 000)	(100.0)	–	6.6	113 000	–	–
	Effectiveness Evaluation	SGSEE	51 000	(51 000)	(100.0)	–	–	–	–	–	–	–	–
	Sub-total J.2		14 134 000	(804 000)	(5.7)	13 330 000	(351 000)	(2.6)	12 979 000	5.8	14 104 000	4.2	14 305 000
	Additional high-priority activities		543 000	2 033 000	374.4	2 576 000	(2 576 000)	(100.0)	–	3.4	2 664 000	–	–

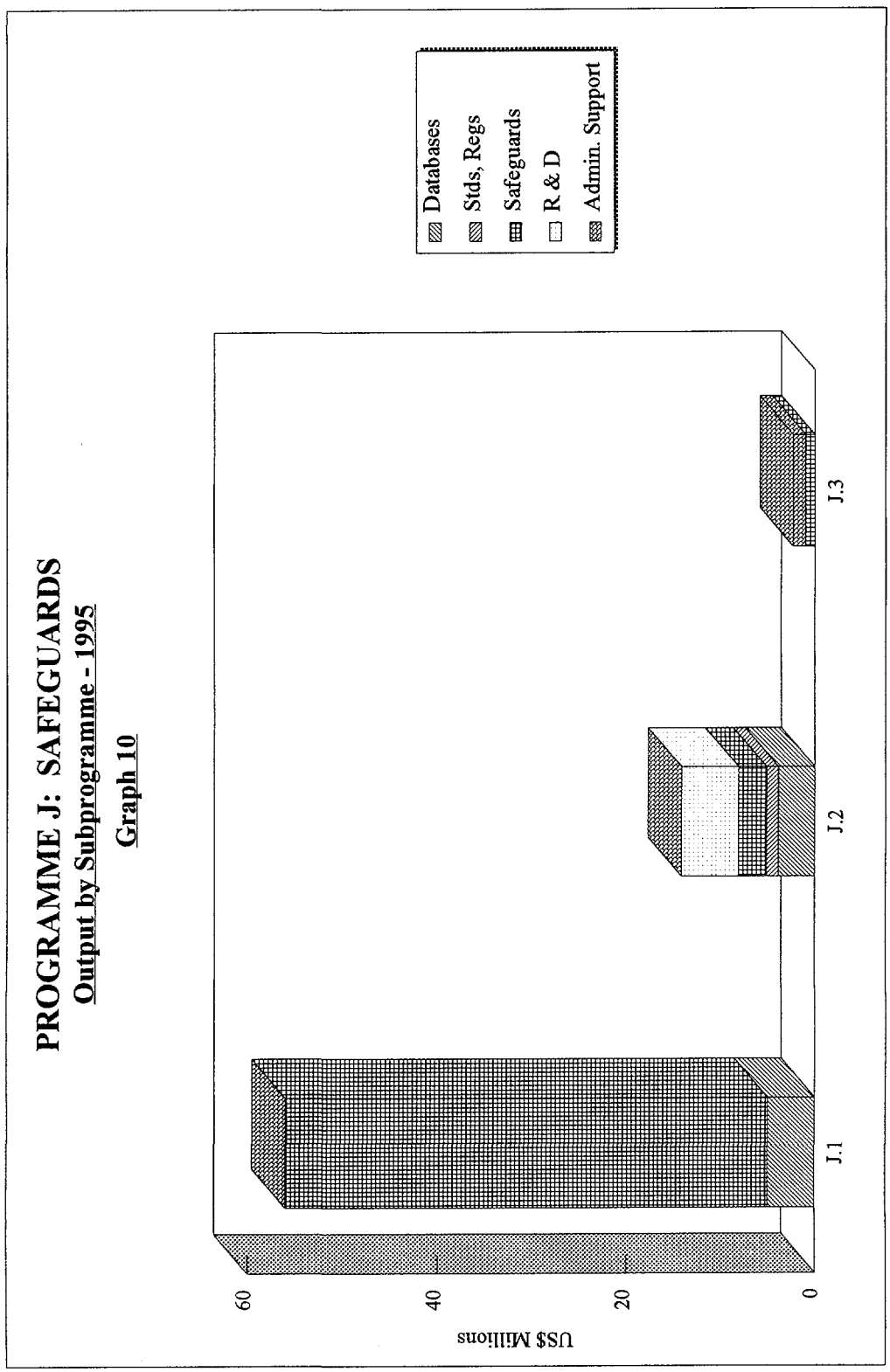
PROGRAMME J: SAFEGUARDS (Contd.)

Summary of Regular Budget estimates by subprogramme

Table 39 (Contd.)

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.3	Safeguards Management:												
	Planning, Direction, Co-ordination and Control (included in S.1.1 – General Management)	DDGSG	[308 000]	–	–	[308 000]	–	–	[308 000]	4.9	[323 000]	4.6	[338 000]
	Effectiveness Evaluation	SGSEE	892 000	50 000	5.6	942 000	–	–	942 000	5.9	998 000	4.2	1 040 000
	Programme and Resources	SGSPR	1 209 000	7 000	0.6	1 216 000	–	–	1 216 000	5.8	1 287 000	4.3	1 342 000
	Additional high-priority activities	ADPI/SG	–	350 000	–	350 000	(350 000)	(100.0)	–	5.7	370 000	–	–
	Sub-total J.3		2 101 000	57 000	2.7	2 158 000	–	–	2 158 000	5.9	2 285 000	4.3	2 382 000
	Additional high-priority activities		–	350 000	–	350 000	(350 000)	(100.0)	–	5.7	370 000	–	–
Programme J – Safeguards			68 294 000	–	–	68 294 000	–	–	68 294 000	6.0	72 422 000	4.2	75 448 000
Additional high-priority activities			543 000	7 203 000	1 326.5	7 746 000	(7 746 000)	(100.0)	–	3.3	8 005 000	–	–

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.


PROGRAMME J: SAFEGUARDS
Output by Subprogramme - 1995
Graph 10
Databases
Stds, Regs
Safeguards
R & D
Admin. Support
US$ Millions
0
20
40
60
J.1
J.2
J.3

J

PROGRAMME J: SAFEGUARDS
Summary of Regular Budget Estimates by Project
Table 40

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.1.	Safeguards Operations													
J.1.01	Verification	Cont.												
	Operations A		SGOA	13 782 000	1 239 000	9.0	15 021 000	97 000	0.7	15 118 000	8.3	16 264 000	4.3	17 063 000
	Operations B		SGOB	10 810 000	(466 000)	(4.3)	10 344 000	161 000	1.6	10 505 000	5.1	10 872 000	4.6	11 488 000
	Additional high-priority activities			–	660 000	–	660 000	(660 000)	(100.0)	–	2.9	679 000	–	–
	Operations C		SGOC	10 382 000	63 000	0.6	10 445 000	97 000	0.9	10 542 000	5.5	11 021 000	4.9	11 595 000
J.1.02	Negotiation and Liaison	Cont.												
	Operations A		SGOA	1 206 000	(236 000)	(19.6)	970 000	–	–	970 000	10.0	1 067 000	4.4	1 114 000
	Additional high-priority activities			–	125 000	–	125 000	(125 000)	(100.0)	–	5.2	132 000	–	–
	Operations B		SGOB	1 507 000	44 000	2.9	1 551 000	–	–	1 551 000	6.0	1 644 000	4.3	1 715 000
	Additional high-priority activities			–	125 000	–	125 000	(125 000)	–	–	5.2	132 000	–	–
	Operations C		SGOC	1 200 000	61 000	5.1	1 261 000	–	–	1 261 000	5.8	1 334 000	4.5	1 394 000
	Additional high-priority activities			–	150 000	–	150 000	(150 000)	(100.0)	–	5.2	158 000	–	–
J.1.03	Liaison with State Authorities	Cont.												
	Operations A		SGOA	–	–	–	–	–	–	–	–	–	–	–
	Operations B		SGOB	–	–	–	–	–	–	–	–	–	–	–
	Operations C		SGOC	–	–	–	–	–	–	–	–	–	–	–
J.1.04	Nuclear Material Accountancy	Cont.												
	Information Treatment		SGIT	4 770 000	(6 000)	(0.1)	4 764 000	46 000	1.0	4 810 000	5.0	5 002 000	4.2	5 263 000
	Additional high-priority activities			–	250 000	–	250 000	(250 000)	(100.0)	–	3.3	258 000	–	–
J.1.05	Equipment Management and Sample Analysis		SGDE RIAL	8 402 000	48 000	0.6	8 450 000	(50 000)	(0.6)	8 400 000	4.5	8 829 000	4.0	9 129 000
	Additional high-priority activities			–	3 510 000	–	3 510 000	(3 510 000)	(100.0)	–	2.9	3 612 000	–	–
	Sub-total J.1.			52 059 000	747 000	1.4	52 806 000	351 000	0.7	53 157 000	6.1	56 033 000	4.2	58 761 000
	Additional high-priority activities			–	4 820 000	–	4 820 000	(4 820 000)	(100.0)	–	3.1	4 971 000	–	–

PROGRAMME J: SAFEGUARDS
Summary of Regular Budget Estimates by Project
Table 40 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.2.	Safeguards Support and Development													
J.2.01	Instrumentation Development and Field Support	Cont.	SGDE	2 050 000	12 000	0.6	2 062 000	54 000	2.6	2 116 000	5.3	2 172 000	4.1	2 322 000
	Additional high-priority activities			543 000	(298 000)	(54.9)	245 000	(245 000)	(100.0)	–	2.9	252 000	–	–
J.2.02	Development of a Safeguards	2000	SGOA	851 000	(118 000)	(13.9)	733 000	–	–	733 000	5.0	770 000	3.9	800 000
	System for a Large		SGDE	216 000	(1 000)	(0.5)	215 000	–	–	215 000	6.5	229 000	4.4	239 000
	Reprocessing Plant in Japan		SGIT	231 000	1 000	0.4	232 000	–	–	232 000	6.0	246 000	4.9	258 000
	(JNFL)		SGCP	213 000	1 000	0.5	214 000	–	–	214 000	7.0	229 000	4.8	240 000
J.2.03	Development of a Safeguards	Suspended	SGOB	–	–	–	–	–	–	–	–	–	–	–
	System for a Heavy Water		SGDE	–	–	–	–	–	–	–	–	–	–	–
	Production Plant in Argentina		SGIT	–	–	–	–	–	–	–	–	–	–	–
	(PIAP – Arroyito)		SGCP	–	–	–	–	–	–	–	–	–	–	–
J.2.04	Development of a Safeguards	Completed	SGOB	–	–	–	–	–	–	–	–	–	–	–
	System for a Multi-Unit		SGDE	–	–	–	–	–	–	–	–	–	–	–
	On-Load Reactor in Canada (Darlington Units 3 & 4)		SGCP	–	–	–	–	–	–	–	–	–	–	–
J.2.05	Development of a Safeguards	Completed	SGOC	–	–	–	–	–	–	–	–	–	–	–
	System for a Siemens-Mox		SGDE	–	–	–	–	–	–	–	–	–	–	–
	Fuel Fabrication Facility		SGIT	–	–	–	–	–	–	–	–	–	–	–
	in Germany		SGCP	–	–	–	–	–	–	–	–	–	–	–
J.2.06	Data Processing Development and Services	Cont.	SGIT	3 832 000	(203 000)	(5.3)	3 629 000	–	–	3 629 000	5.5	3 828 000	4.2	3 988 000
	Additional high-priority activities		SGIT	–	900 000	–	900 000	(900 000)	(100.0)	–	2.9	926 000	–	–
J.2.07	Systems Studies and Approaches	Cont.	SGCP	1 423 000	(272 000)	(19.1)	1 151 000	157 000	13.6	1 308 000	6.1	1 221 000	4.1	1 444 000
	Additional high-priority activities		SGCP	–	106 000	–	106 000	(106 000)	(100.0)	–	6.8	113 000	–	–

PROGRAMME J: SAFEGUARDS
Summary of Regular Budget Estimates by Project
Table 40 (Contd.)

Project Codes		Project Durat.	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.2.08	Standardization	Cont.	SGCP	1 160 000	42 000	3.6	1 202 000	–	–	1 202 000	6.4	1 279 000	4.4	1 335 000
J.2.09	Statistical Analysis	Cont.	SGCP	1 613 000	46 000	2.9	1 659 000	–	–	1 659 000	6.6	1 769 000	4.2	1 844 000
J.2.10	Safeguards Training	Cont.	SGOB	–	61 000	–	61 000	(61 000)	(100.0)	–	5.2	64 000	–	–
			SGDE	1 039 000	48 000	4.6	1 087 000	–	–	1 087 000	5.2	1 144 000	4.4	1 194 000
	Additional high–priority activities		SGDE	–	300 000	–	300 000	(300 000)	(100.0)	–	6.0	318 000	–	–
J.2.11	Development of a Safeguards	2000	SGOB	–	–	–	–	–	–	–	–	–	–	–
	System for the Five–Unit CANDU 600		SGOC	462 000	(93 000)	(20.1)	369 000	–	–	369 000	4.6	386 000	3.9	401 000
	Nuclear Power Complex in Romania		SGDE	108 000	–	–	108 000	–	–	108 000	6.5	115 000	4.4	120 000
	(Cernavoda Units 1 & 2)		SGCP	106 000	1 000	0.9	107 000	–	–	107 000	7.5	115 000	4.4	120 000
J.2.12	Strengthening the Effectiveness	1995	SGOA	99 000	(2 000)	(2.0)	97 000	(97 000)	(100.0)	–	7.2	104 000	–	–
	and Improving the Efficiency of		SGOB	108 000	(8 000)	(7.4)	100 000	(100 000)	(100.0)	–	7.0	107 000	–	–
	the Safeguards System		SGOC	110 000	(13 000)	(11.8)	97 000	(97 000)	(100.0)	–	7.2	104 000	–	–
	(Programme 93 + 2)		SGDE	161 000	(107 000)	(66.5)	54 000	(54 000)	(100.0)	–	7.4	58 000	–	–
			SGIT	92 000	(46 000)	(50.0)	46 000	(46 000)	(100.0)	–	6.5	49 000	–	–
			SGCP	209 000	(102 000)	(48.8)	107 000	(107 000)	(100.0)	–	7.5	115 000	–	–
			SGSEE	51 000	(51 000)	(100.0)	–	–	–	–	–	–	–	–
	Additional high–priority activities		SGDE	–	1 025 000	–	1 025 000	(1 025 000)	(100.0)	–	2.9	1 055 000	–	–
	Sub–total J.2.			14 134 000	(804 000)	(5.7)	13 330 000	(351 000)	(2.6)	12 979 000	5.8	14 104 000	4.2	14 305 000
	Additional high–priority activities			543 000	2 033 000	374.4	2 576 000	(2 576 000)	(100.0)	–	3.4	2 664 000	–	–
J.3.	Safeguards Management													
J.3.01	Planning, Direction, Co–ordination and Control (Included in S.1.)	Cont.	DDGSG	[308 000]	–	–	[308 000]	–	–	[308 000]	4.9	[323 000]	4.6	[338 000]
J.3.02	Effectiveness Evaluation	Cont.	SGSEE	892 000	50 000	5.6	942 000	–	–	942 000	5.9	998 000	4.2	1 040 000
J.3.03	Programme and Resources	Cont.	SGSPR	1 209 000	7 000	0.6	1 216 000	–	–	1 216 000	5.8	1 287 000	4.3	1 342 000
	Additional high–priority activities		ADPI/SG	–	350 000	–	350 000	(350 000)	(100.0)	–	5.7	370 000	–	–
	Sub–total J.3.			2 101 000	57 000	2.7	2 158 000	–	–	2 158 000	5.9	2 285 000	4.3	2 382 000
	Additional high–priority activities			–	350 000	–	350 000	(350 000)	(100.0)	–	5.7	370 000	–	–
Programme J – Safeguards				68 294 000	–	–	68 294 000	–	–	68 294 000	6.0	72 422 000	4.2	75 448 000
	Additional high–priority activities			543 000	7 203 000	1 326.5	7 746 000	(7 746 000)	(100.0)	–	3.3	8 005 000	–	–

PROGRAMME J: SAFEGUARDS
List of projects and estimated total resources for 1995 and 1996
Table 41

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF
J.1.	Safeguards Operations										
J.1.01	Verification	Cont.									
	Operations A		SGOA	62.5	29.0	16 264 000	220 000	–	17 063 000	220 000	–
	Operations B		SGOB	46.0	27.0	10 872 000	200 000	–	11 488 000	200 000	–
	Additional high-priority activities			–	–	679 000	–	–	–	–	–
	Operations C		SGOC	54.0	29.0	11 021 000	200 000	–	11 595 000	200 000	–
J.1.02	Negotiation and Liaison	Cont.									
	Operations A		SGOA	6.0	2.0	1 067 000	–	–	1 114 000	–	–
	Additional high-priority activities			–	–	132 000	–	–	–	–	–
	Operations B		SGOB	8.0	2.0	1 644 000	–	–	1 715 000	–	–
	Additional high-priority activities			–	–	132 000	–	–	–	–	–
	Operations C		SGOC	6.0	2.0	1 334 000	–	–	1 394 000	–	–
	Additional high-priority activities			–	–	158 000	–	–	–	–	–
J.1.03	Liaison with State Authorities	Cont.									
	Operations A		SGOA	–	–	–	–	–	–	–	–
	Operations B		SGOB	–	–	–	–	–	–	–	–
	Operations C		SGOC	–	–	–	–	–	–	–	–
J.1.04	Nuclear Material Accountancy	Cont.									
	Information Treatment		SGIT	6.5	24.0	5 002 000	260 000	–	5 263 000	260 000	–
	Additional high-priority activities			–	–	258 000	–	–	–	–	–
J.1.05	Equipment Management and Sample Analysis		SGDE RIAL	8.3 6.2	25.3 23.4	8 829 000	450 000	–	9 129 000	450 000	–
	Additional high-priority activities			–	–	3 612 000	–	–	–	–	–
	Sub-total J.1.		SG RIAL	197.3 6.2	140.3 23.4	56 033 000	1 330 000	–	58 761 000	1 330 000	–
	Additional high-priority activities			–	–	4 971 000	–	–	–	–	–
J.2.	Safeguards Support and Development										
J.2.01	Instrumentation Development and Field Support	Cont.	SGDE	8.9	11.4	2 172 000	1 110 000	–	2 322 000	1 110 000	–
	Additional high-priority activities			–	–	252 000	–	–	–	–	–
J.2.02	Development of a Safeguards System for a Large Reprocessing Plant in Japan (JNFL)	2000	SGOA SGDE SGIT SGCP	3.5 2.0 2.5 2.0	1.0 – – –	770 000 229 000 246 000 229 000	– – – –	– – – –	800 000 239 000 258 000 240 000	– – – –	– – – –
J.2.03	Development of a Safeguards System for a Heavy Water Production Plant in Argentina (PIAP – Arroyito)	Suspended	SGOB SGDE SGIT SGCP	– – – –	– – – –	– – – –	– – – –	– – – –	– – – –	– – – –	– – – –
J.2.04	Development of a Safeguards System for a Multi-Unit On-Load Reactor in Canada (Darlington Units 3 & 4)	Completed	SGOB SGDE SGCP	– – –	– – –	– – –	– – –	– – –	– – –	– – –	– – –
J.2.05	Development of a Safeguards System for a Siemens-Mox Fuel Fabrication Facility in Germany	Completed	SGOC SGDE SGIT SGCP	– – – –	– – – –	– – – –	– – – –	– – – –	– – – –	– – – –	– – – –
J.2.06	Data Processing Development and Services	Cont.	SGIT	17.5	16.0	3 828 000	420 000	–	3 988 000	420 000	–
	Additional high-priority activities		SGIT	–	–	926 000	–	–	–	–	–
J.2.07	Systems Studies and Approaches	Cont.	SGCP	6.0	4.4	1 221 000	400 000	–	1 444 000	400 000	–
	Additional high-priority activities		SGCP	–	–	113 000	–	–	–	–	–

PROGRAMME J: SAFEGUARDS
List of projects and estimated total resources for 1995 and 1996
Table 41 (Contd.)

Project Codes		Project Durat.	Respon. Division	1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF
J.2.08	Standardization	Cont.	SGCP	7.0	7.3	1 279 000	200 000	–	1 335 000	200 000	–
J.2.09	Statistical Analysis	Cont.	SGCP	12.0	6.3	1 769 000	300 000	–	1 844 000	300 000	–
J.2.10	Safeguards Training	Cont.	SGOB	–	–	64 000	–	–	–	–	–
			SGDE	4.3	5.3	1 144 000	840 000	–	1 194 000	840 000	–
	Additional high-priority activities		SGDE	–	–	318 000	–	–	–	–	–
J.2.11	Development of a Safeguards System for the Five-Unit CANDU Nuclear Power Complex in Romania (Cernavoda Units 1 & 2)	2000 600	SGOB	–	–	–	–	–	–	–	–
			SGOC	2.0	–	386 000	–	–	401 000	–	–
			SGDE	1.0	–	115 000	–	–	120 000	–	–
			SGCP	1.0	–	115 000	–	–	120 000	–	–
J.2.12	Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System (Programme 93 + 2)	1995	SGOA	1.0	–	104 000	–	–	–	–	–
			SGOB	1.0	–	107 000	–	–	–	–	–
			SGOC	1.0	–	104 000	–	–	–	–	–
			SGDE	0.5	–	58 000	–	–	–	–	–
			SGIT	0.5	–	49 000	–	–	–	–	–
			SGCP	1.0	–	115 000	–	–	–	–	–
			SGSEE	–	–	–	–	–	–	–	–
	Additional high-priority activities		SGDE	–	–	1 055 000	–	–	–	–	–
	Sub-total J.2.			74.7	51.7	14 104 000	3 270 000	–	14 305 000	3 270 000	–
	Additional high-priority activities			–	–	2 664 000	–	–	–	–	–
J.3.	Safeguards Management										
J.3.01	Planning, Direction, Co-ordination and Control (Included in S.1.)	Cont.	DDGSG	[1.0]	[2.0]	[323 000]	–	–	[338 000]	–	–
J.3.02	Effectiveness Evaluation	Cont.	SGSEE	6.0	5.0	998 000	–	–	1 040 000	–	–
J.3.03	Programme and Resources	Cont.	SGSPR	6.0	7.0	1 287 000	400 000	–	1 342 000	400 000	–
	Additional high-priority activities		ADPI/SG	–	–	370 000	–	–	–	–	–
	Sub-total J.3.			12.0	12.0	2 285 000	400 000	–	2 382 000	400 000	–
	Additional high-priority activities			–	–	370 000	–	–	–	–	–
Programme J – Safeguards			SG	284.0	204.0	72 422 000	5 000 000	–	75 448 000	5 000 000	–
			RIAL	6.2	23.4						
	Additional high-priority activities			–	–	8 005 000	–	–	–	–	–
			Lapsed Posts	11.0	5.0						

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

Subprogramme J.1.
Safeguards Operations

Main Accomplishments (1991-94)

J/9. By the end of 1993, a total of 194 safeguards agreements were in force with 116 States. Safeguards are currently being applied in 60 States having significant nuclear activities (and in Taiwan, China). Table 42 gives information on the number of nuclear installations subject to safeguards or containing safeguarded nuclear material in 1993, with projections for the period 1994-97. Table 43 shows the amounts of nuclear material under Agency safeguards at the end of 1993, with forecasts for 1995 and 2000.

J/10. During this period, the Agency started the implementation of safeguards at two facilities in China under the voluntary offer agreement, and also undertook the implementation of safeguards in the Democratic People's Republic of Korea under the NPT agreement concluded with the Agency.

J/11. Following South Africa's accession to NPT in 1991 and the subsequent entry into force of the safeguards agreement, inspection activities have been carried out to verify nuclear material included in the initial report to the Agency and to assess the completeness of the inventory of South Africa's nuclear installations. Upon invitation by the South African authorities, these activities were extended to include the assessment of the status of South Africa's abandoned nuclear weapons programme and to gain assurance that all the nuclear material used in the programme had been accounted for and was under Agency safeguards.

J/12. Subsequent to the conclusion of the safeguards agreement between Argentina, Brazil, the ABACC and the Agency in December 1991, extensive informal discussions have been held to facilitate early implementation of the agreement. These discussions included the submission and verification of initial reports, draft Subsidiary Arrangements and training of ABACC staff. The agreement has now been ratified by all parties and is expected to enter into force in the near future.

J/13. In order to improve efficiency between EURATOM and the Agency in the implementation of safeguards, a new Partnership Approach was established in 1991. The approach is based, inter alia, on optimization of the necessary practical arrangements and the use of commonly agreed safeguards approaches and inspection planning procedures. It also covers other areas of co-operation in research and development and in training of inspectors. Practical arrangements to optimize resources have been agreed and are already being implemented at some types of facilities.

J/14. The two Regional Offices (Tokyo and Toronto) now cover safeguards in several States in their respective regions. The offices have been strengthened to enable them to respond to the short-notice inspection needs of the States in the region. This has also led to an increase in the effectiveness of safeguards and to more efficient use of resources available to the Agency.

J/15. During this period the Darlington Project for the development of a safeguards system for a multi-unit on-load reactor was successfully completed. The safeguards scheme, including the

application of core discharge monitors, has provided the Agency with the technical capability to safeguard multi-unit on-load reactors.

J/16. In order to prepare for the application of safeguards in the States belonging to the former Soviet Union, a number of fact finding missions and technical visits have been carried out. All major facilities in the States concerned have been visited and preparation of the safeguards approaches have been initiated.

J/17. In the nuclear material accountancy area, extensive consultations were conducted with, and assistance given to, relevant States for their actual or contemplated transition to a comprehensive safeguards agreement.

J/18. To support Member States in establishing and maintaining State Systems of Accounting and Control of Nuclear Material (SSACs), several seminars and courses have been organized, particularly for personnel from State authorities in the newly independent States of the former Soviet Union.

J/19. Installation, maintenance and calibration services were provided for the NDA, video and other surveillance equipment used by inspectors, including preventive maintenance and servicing of equipment installed in nuclear facilities.

J/20. On average, the Safeguards Analytical Laboratory (SAL) and the Network of Analytical Laboratories (NWAL) analysed annually about 1200 samples from routine inspections and 500 samples from ad hoc inspections and from the inspection activities carried out in Iraq pursuant to United Nations Security Council Resolution 687. About 3500 measurements were performed annually for calibration and quality control of NDA techniques.

J/21. An average of 9400 person-days of inspection were carried out annually in 1990-92 (a person-day is defined as being a day during which a single inspector has access to a facility at any time for a total of not more than eight hours).

Main Activities Planned for 1995-96

J/22. The principal focus will continue to be on obtaining, through independent on-site verification, the information essential to assessing the compliance of States with their safeguards undertakings regarding non-proliferation and the peaceful use of nuclear energy.

J/23. Approximately 9950 person-days of inspection (PDI) are forecast for 1995. This figure includes the additional inspection effort expected to result from the acceptance by more States of the former USSR of comprehensive safeguards and from the comprehensive safeguards agreement between Argentina, Brazil, the ABACC and the Agency. The increase is offset by expected savings from operational changes as well as changes in safeguards approaches at facilities in certain States, especially in EURATOM. However, additional efforts will be required for verification of the correctness and assessment of the completeness of initial declarations of inventories of nuclear material and of facilities.

J/24. The Secretariat is continuing to explore a number of avenues for reducing safeguards implementation costs and for increasing the efficiency of use of human and other resources.

J/25. Negotiation of Subsidiary Arrangements will be undertaken with States entering into safeguards agreements with the Agency, especially in States belonging to the former Soviet Union. In addition, efforts will focus on the renegotiation of existing Facility Attachments to reflect new safeguards approaches and technical changes.

J/26. Following the completion of the programme for replacing the Minolta film cameras by video systems (MIVS, COSMOS, MUX, etc.), efforts will be concentrated on reducing the time required for reviewing video tapes, improving reliability and initiating the transition from tape to digital systems.

J/27. The demands placed on safeguards surveillance and measurement equipment have continued to increase in both quantity and quality. Several safeguards measurement systems (e.g. neutron counting equipment, multichannel analysers, high resolution gamma detectors, Cerenkov viewing devices) have become obsolete and will need to be replaced by modern equipment. The additional cost for the replacement in 1995 and 1996 will be approximately $1 million per year.

J/28. The volume of information on nuclear material and facilities required by the Agency to perform its safeguards activities continues to grow. At present, the database for State-submitted accounting information contains a total of approximately 217 000 reports consisting of about 11 million individual line entries concerning the inventory and movement of nuclear material since the establishment of the database in 1972. In 1993, the Agency received about 22 000 reports consisting of about 1 300 000 individual line entries. This figure increases by about 10% a year.

J/29. An important part of the analysis of State accounting data is the verification of data from shippers and receivers concerning international transfers of nuclear material; this verification is an integral part of the Agency's nuclear material accountancy. Current safeguards agreements do not, however, provide for all exports and imports of nuclear material to be reported to the Agency. In 1993 the Board of Governors endorsed a reporting scheme encouraging all Member States to report on a voluntary basis information on the export and import of all nuclear material as well as information on the export of specified equipment and non-nuclear material. The Board also invited States to report the production of nuclear material and the import of specified equipment, to the extent possible. The Secretariat provided guidance to Member States on the modalities of reporting and is currently developing the systems necessary to receive and process the data.

J/30. In addition to the proposed baseline budget for 1995, the following high priority activities are required:

$2 264 000 for additional laboratory space at SAL with clean room installations and the acquisition of analytical equipment for the detection of possible undeclared activities (J.1.05);

$679 000 for additional equipment in support of verification activities (in particular generic review stations and underwater sealing hardware) (J.1.01);

$258 000 for the seminar on accounting data (J.1.04);

$1 132 000 for new inspection equipment and replacement of obsolete items (J.1.05);

$216 000 for additional laboratory equipment at SAL (J.1.05);

$422 000 for ADEX and ADLG support (S.2.1 and S.2.2).

Subprogramme J.2.
Safeguards Support and Development

Main Accomplishments (1991-94)

J/31. More than 25 new instruments were authorized for inspection use during this time period after careful examination for their functionality and safety, a review of the procedural documentation for their operation and maintenance and training of inspectors in their use. These include instruments developed under Member State support programmes and by EURATOM, as well as instruments developed in-house. They range from portable general use instruments to facility specific and facility installed instruments.

J/32. A computer system was developed and put into production to generate the statement providing inspection results to a State on the basis of data in the computerized inspection report (CIR).

J/33. Steps were taken to develop the necessary computer systems to process the voluntary submission of information by Member States on the export and import of nuclear material, specified equipment and non-nuclear material as proposed by the Director General to the Board of Governors.

J/34. Member State support programmes and other extrabudgetary contributions continued to provide major assistance to the R&D and safeguards implementation support activities. Procedures were introduced to ensure improved feedback on the use the Agency makes of the results of tasks completed under support programmes.

J/35. An examination of possible ways to strengthen the effectiveness of the current safeguards system and to improve its efficiency has been conducted, both by the Secretariat and by the Standing Advisory Group on Safeguards Implementation (SAGSI). Several measures have been considered and endorsed by the Board of Governors, including the use of special inspections, early provision and use of design information, a voluntary reporting scheme regarding exports, imports and the production of nuclear material, as well as exports and imports of specified equipment and non-nuclear material.

J/36. Following the SAGSI report to the Director General in April 1993 on new approaches for a more effective and efficient safeguards system, and a subsequent review of these recommendations by the Board of Governors, a major project was established to further define, develop and demonstrate these new approaches. This project is referred to as "Programme 93+2". It is designed to provide a decision structure for defining the post-1995 safeguards

system through a detailed description of the cost-benefit, legal and technical aspects of the various recommendations.

J/37. The LASCAR (Large Scale Reprocessing Plant Safeguards) project was successfully completed after a four-year study. In general, the study concluded that a wide range of techniques is currently available or is being introduced for safeguarding large scale reprocessing plants in an effective and efficient manner.

J/38. Guidelines and procedures were developed to improve the processing of information related to nuclear activities in each State. A more systematic collection and analysis of information on safeguards related issues in each State was initiated by using information from open sources and from safeguards implementation.

J/39. In consultation with Member States, the Agency continued a programme to develop safeguards requirements and methodologies for geological spent fuel repositories and to formulate safeguards policy before such facilities become operational. A comprehensive set of studies was proposed to Member State support programmes.

J/40. In support of the activities of SAGSI, several studies were undertaken, including the application of the randomization principle to inspections at LWRs, the radiation levels of power and research reactor fuel, as well as a cost-benefit analysis of alternative safeguards approaches.

J/41. Advanced and specialized training courses on the use of particular NDA or C/S equipment, as well as on safeguards activities at specific types of facilities, were held regularly for staff of the Department. In addition, various training courses on the implementation of State Systems of Accounting and Control of Nuclear Material (SSACs) were held in several Member States.

J/42. The training programme for junior professionals from developing countries was reintroduced in 1993, with five participants from five Member States.

Main Activities Planned for 1995-96

J/43. Work will continue on the evaluation and development of new instruments for inspection purposes. In the area of NDA equipment, efforts are being pursued to produce improved detectors and computer control. It is expected that improvements through weight reduction and the use of standardized modules and interfaces will allow better utilization of the instrumentation by inspectors. The major development work on NDA instrumentation is in the area of in-facility installations.

J/44. The possibility of using unattended monitoring systems with integrated NDA and C/S will be actively pursued, with the aim of achieving a standard system for universal application.

J/45. As requested by the Board, the Department of Safeguards has begun a comprehensive programme of actions referred to as the "Programme 93+2" aimed at strengthening and streamlining safeguards implementation. The objective of this programme is to develop and test, as appropriate, the technical, financial, legal and human resources aspects of measures to enhance the Agency's ability to detect and have access to any undeclared nuclear activities in States with comprehensive safeguards agreements, and to develop cost reduction measures consistent with

effective safeguards. This programme will be completed in 1995 and could result in a more cost-effective safeguards system covering both declared and undeclared nuclear activities. The budgeted costs ascribed to this project in 1995 will be absorbed in the ongoing safeguards programme in 1996 when broader implementation of new measures will begin.

J/46. Some of these measures require additional obligations from Member States with respect to the provision of more information on their nuclear activities and the enhancement of the role of State accounting systems (SSACs). Unless these conditions are met, it cannot be excluded that the continuation of the implementation of current safeguards approaches with the same level of assurance will require additional funds owing to an increase in the number of States with safeguards agreements, the number of nuclear facilities and the amounts of nuclear material under safeguards.

J/47. Environmental samples and samples derived from inspection activities carried out to verify the completeness and correctness of a State's declaration will be collected and analysed.

J/48. Training courses for staff of the Department, primarily inspectors, as well as for personnel of Member States will be organized.

J/49. The following amounts are needed for necessary high priority activities not covered by the regular budget:

$252 000 for development and evaluation equipment (J.2.01);

$926 000 for updating the safeguards LAN infrastructure and migration to new mainframe technology (J.2.06);

$113 000 for the development of a capability for in-house core physics calculations (J.2.07);

$318 000 for the training programme for professionally qualified persons from developing countries (J.2.10);

$1 055 000 for equipment and support costs for the environmental monitoring testing programme (J.2.12).

Subprogramme J.3.
Safeguards Management

Main Accomplishments (1991-94)

J/50. The safeguards criteria 1991-95 were introduced for use in the planning of safeguards activities as well as for the evaluation of safeguards implementation. The introduction of these criteria resulted in increased uniformity of implementation and contributed to optimizing cost effectiveness. Following their introduction, appropriate data collection and evaluation procedures were developed to allow timely feedback of evaluation results. This increased effectiveness through the identification of aspects that could lead to failure to attain inspection goals early

enough to allow corrective action to be taken. Furthermore, some evaluations are now carried out on the basis of the material balance period rather than the calendar year and statements submitted to the State and evaluation results have been made more consistent. In 1993, a mid-term review of the criteria was initiated in order to update them as required for the 1994-95 period and to start preparation for 1996-2000.

Main Activities Planned for 1995-96

J/51. Efforts will continue to be made to plan, direct, co-ordinate, control and evaluate the activities of the Department of Safeguards, paying particular attention to the need to improve the efficiency and effectiveness of safeguards implementation. Use of the Department's human and financial resources is carefully monitored with management information developed, maintained and communicated to senior managers of the Department.

J/52. The review and modification of the safeguards criteria to cover the period 1995-96 will take account of the experience with the 1991-95 criteria and the introduction of measures under development to strengthen and improve the cost effectiveness of safeguards. As a part of this effort the evaluation of the effectiveness of safeguards implementation will be modified and the contents of the annual Safeguards Implementation Report (SIR) will be refined.

J/53. Additional high priority resources are required to meet emerging requirements within the Department ($265 000) and for support of public information activities ($105 000) in ADPI (S.5.2).

Installation subject to safeguards or containing safeguarded material in non-nuclear weapon States
(1993 to 1997)

Table 42

Type of installation	1993		1994		1995		1996		1997	
	Comprehensive agreements	INFCIRC/66-type agreements	Comprehensive agreements	INFCIRC/66-type agreements	Comprehensive agreements	INFCIRC/66-type agreements	Comprehensive agreements	INFCIRC/66-type agreements	Comprehensive agreements	INFCIRC/66-type agreements
Power reactors	185	17	210	14	215	14	227	14	229	14
Research reactors and critical assemblies	144	22	171	13	173	14	175	14	176	14
Conversion plants	7	4	15	2	15	2	15	2	15	2
Fuel fabrication plants	34	10	41	5	41	5	42	5	43	5
Reprocessing plants	5	1	8	1	8	1	8	1	9	1
Enrichment plants	5	1	9	-	9	-	9	-	9	-
Separate storage facilities	39	5	45	1	47	1	48	1	48	1
Other facilities (>1kg)	60	4	63	2	63	2	63	2	63	2
Other facilities (≤1kg)	439	30	441	30	441	30	441	30	441	30
Non-nuclear installations	-	3	-	1	-	1	-	1	-	1
TOTAL	918	97	1003	69	1012	70	1028	70	1033	70

Amounts (in tonnes) of nuclear material under Agency safeguards
in non-nuclear-weapon States

(Status as of 31 December 1993 and forecast for 1995 and 2000)

Table 43

Material	1993		1995		2000	
	Comprehensive agreements	INFCIRC/66-type agreements	Comprehensive agreements	INFCIRC/66-type agreements	Comprehensive agreements	INFCIRC/66-type agreements
Plutonium	296.1	25.7	335-350	30-32	440-500	37-42
Uranium enriched to 20% or more	9.5	0.3	9.5	0.3	9.5	0.3
Uranium enriched to less than 20%	27 900	2 110	30 300-31 800	2 350-2 500	35 900-40 200	2 650-3 000
Source material	57 800	3 540	58 300-61 200	4 200-4 500	73 500-82 200	5 400-6 000

MAJOR PROGRAMME S

DIRECTION AND SUPPORT

MAJOR PROGRAMME S
DIRECTION AND SUPPORT
Summary of total resources by programme
Table 44

	Programme / Major Programme	1995 Staffing P	1995 Staffing GS	1995 Regular Budget estimates	1995 Funds from other UN organizations	1995 Other extra-budgetary resources	1995 TACF a/	1996 Regular Budget estimates	1996 Funds from other UN organizations	1996 Other extra-budgetary resources	1996 TACF a/
S.1.	General Management and Secretariat of the Policy-making Organs	24.0	21.0	11 933 000	3 663 000 b/	–	–	12 432 000	3 663 000 b/	–	–
	Additional high-priority activities	1.0	1.0	157 000	–	–	–	164 000	–	–	–
S.2.	Administration	56.0	103.0	15 683 000	–	–	–	16 361 000	–	–	–
	Additional high-priority activities	–	–	211 000	–	–	–	220 000	–	–	–
S.3.	Technical Co-operation Servicing and Co-ordination	52.0	78.0	11 795 000	–	380 000	7 866 000	12 380 000	–	246 000	7 866 000
	Additional high-priority activities	1.0	–	289 000	–	–	–	301 000	–	–	–
S.4.	General Services	10.0	104.0	22 184 000	–	–	–	23 105 000	–	–	–
	Additional high-priority activities	–	–	1 635 000	–	–	–	1 704 000	–	–	–
S.5.	Specialized Service Activities	23.0	39.0	7 937 000	–	540 000	161 000	8 123 000	–	540 000	161 000
	Additional high-priority activities	–	–	210 000	–	–	–	–	–	–	–
S.6.	Support Services	101.0	219.0	9 182 000 c/	–	–	–	9 495 000 c/	–	–	–
				[32 757 000] d/	–	–	–	[33 894 000] d/	–	–	–
	Major Programme S	266.0	564.0	78 714 000	3 663 000	920 000	8 027 000	81 896 000	3 663 000	786 000	8 027 000
	Additional high-priority activities	2.0	1.0	2 502 000	–	–	–	2 389 000	–	–	–

a/ Includes UNDP and footnote a/ amounts where applicable. All amounts are initial and tentative.
b/ United Nations Security Council Resolution 687 on Iraq.
c/ All costs except those of the Library, Data Processing Central Services and Publishing Services, have been allocated to the user programmes. Contracts Administration Services, Conference Services, Translation and Records Services, Data Processing Applications Services and Printing Services are shared by the user programmes. Medical Services are allocated to Personnel Services. The cost of Radiation Protection Services is charged to Safeguards (Programme J) and TC projects, and – in respect of other in-house utilization – to subprogramme H.7. Only the Library, Data Processing Central Services and Publishing Services have not been allocated to any other programme and their costs are therefore shown under this programme.
d/ Totals as shown in Table 56.

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME S.1: GENERAL MANAGEMENT AND SECRETARIAT OF THE POLICY-MAKING ORGANS

Summary of Regular Budget estimates by subprogramme

Table 45

	Subprogramme	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.1.1	General Management	3 512 000	(24 000)	(0.7)	3 488 000	–	–	3 488 000	5.7	3 688 000	4.2	3 844 000
	Additional high-priority activities	109 000	–	–	109 000	–	–	109 000	5.5	115 000	4.4	120 000
S.1.2	Secretariat of the Policy-making Organs	6 998 000	(1 000)	(0.01)	6 997 000	–	–	6 997 000	5.2	7 360 000	4.1	7 664 000
	Additional high-priority activities	–	40 000	–	40 000	–	–	40 000	5.0	42 000	4.8	44 000
S.1.3	Internal Audit and Evaluation Support	838 000	(1 000)	(0.1)	837 000	–	–	837 000	5.7	885 000	4.4	924 000
S.1	General Management and Secretariat of the Policy-making Organs	11 348 000	(26 000)	(0.2)	11 322 000	–	–	11 322 000	5.4	11 933 000	4.2	12 432 000
	Additional high-priority activities	109 000	40 000	36.7	149 000	–	–	149 000	5.4	157 000	4.5	164 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

List of projects and estimated total resources for 1995 and 1996

Table 46

Project Codes		1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Extra-Budgetary a_/	TACF	Estimated Total Resources for 1996 Regular Budget	Extra-Budgetary a_/	TACF
S.1.1	General Management	16.0	13.0	3 688 000	3 663 000	–	3 844 000	3 663 000	–
	Additional high-priority activities	1.0	–	115 000	–	–	120 000	–	–
S.1.2	Secretariat of the Policy-making Organs	3.0	3.0	7 360 000	–	–	7 664 000	–	–
	Additional high-priority activities	–	1.0	42 000	–	–	44 000	–	–
S.1.3	Internal Audit and Evaluation Support	5.0	5.0	885 000	–	–	924 000	–	–
S.1.	General Management and Secretariat of the Policy-making Organs	24.0	21.0	11 933 000	3 663 000	–	12 432 000	3 663 000	–
	Additional high-priority activities	1.0	1.0	157 000	–	–	164 000	–	–

a_/ United Nations Security Council Resolution 687 on Iraq.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME S.1

GENERAL MANAGEMENT AND SECRETARIAT OF THE POLICY-MAKING ORGANS

Subprogramme S.1.1 - General Management

S/1. To provide support for the Director General and to ensure adequate overview of the Agency's activities, it is proposed to maintain the current level of resources in the Office of the Director General. While it remains desirable to strengthen the programme planning function, this has not been included in the Budget and is shown as an additional high priority item (P-5 post: $115 000). The Offices of the Deputy Directors General will remain unchanged.

Subprogramme S.1.2 - Secretariat of the Policy-making Organs

S/2. The aim is to provide organizational and administrative services required by the General Conference and the Board of Governors and their committees. Proposed resources have been held to the 1994 level. However, in recent years there has been a trend towards extended and/or additional meetings of the Board of Governors and its committees. If this trend continues, the resources foreseen for certain supporting services, such as translation, interpretation and printing, may not be sufficient. Also, additional secretarial assistance may be needed in the Secretariat of the Policy-making Organs owing to the increasing workload (additional high priority activities amounting to $42 000).

Subprogramme S.1.3 - Internal Audit and Evaluation Support

S/3. The Office provides internal audit services and evaluation support services. It undertakes an annual audit programme with the objective of providing management with assurance that there are adequate internal controls in operation to ensure compliance with the established regulations, rules, policies and procedures and that activities are carried out in an economic and efficient manner. Results of audits together with recommendations are submitted to management for corrective action, where necessary.

S/4. The objective of the evaluation support function is to ensure that the evaluation activities of the Agency's programme are appropriately designed and that the programmes are adequately reviewed to evaluate their effectiveness in meeting their objectives.

S/5. Resources for the office are to be held to current levels.

PROGRAMME S.2: ADMINISTRATION

Summary of Regular Budget estimates by subprogramme

Table 47

	Subprogramme	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.2.1	External Relations	1 875 000	(10 000)	(0.5)	1 865 000	–	–	1 865 000	5.6	1 969 000	4.2	2 052 000
S.2.7	Conference Services	800 000	–	–	800 000	–	–	800 000	5.0	840 000	4.5	878 000
S.2.2	Legal Services	1 442 000	(4 000)	(0.3)	1 438 000	–	–	1 438 000	5.9	1 523 000	4.5	1 591 000
	Additional high–priority activities	–	100 000	–	100 000	–	–	100 000	5.9	106 000	4.5	111 000
S.2.3	Management Services	380 000	–	–	380 000	–	–	380 000	5.3	400 000	4.0	416 000
S.2.4	Personnel Services	4 171 000	(6 000)	(0.1)	4 165 000	–	–	4 165 000	5.1	4 378 000	4.2	4 563 000
	Additional high–priority activities	–	100 000	–	100 000	–	–	100 000	5.1	105 000	4.2	109 000
S.2.5	Budget and Finance	6 063 000	(3 000)	(0.1)	6 060 000	–	–	6 060 000	5.2	6 378 000	4.4	6 657 000
S.2.6	Staff Council	184 000	–	–	184 000	–	–	184 000	6.0	195 000	4.6	204 000
S.2	Administration	14 915 000	(23 000)	(0.2)	14 892 000	–	–	14 892 000	5.3	15 683 000	4.3	16 361 000
	Additional high–priority activities	–	200 000	–	200 000	–	–	200 000	5.5	211 000	4.3	220 000

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

List of projects and estimated total resources for 1995 and 1996

Table 48

Project Codes		1995 Staffing P	GS	Estimated Total Resources for 1995 Regular Budget	Extra-Budgetary	TACF	Estimated Total Resources for 1996 Regular Budget	Extra-Budgetary	TACF
S.2.1	External Relations	10.0	12.0	1 969 000	–	–	2 052 000	–	–
S.2.7	Conference Services	2.0	7.0	840 000	–	–	878 000	–	–
S.2.2	Legal Services	8.0	5.0	1 523 000	–	–	1 591 000	–	–
	Additional high–priority activities	–	–	106 000	–	–	111 000	–	–
S.2.3	Management Services	2.0	2.0	400 000	–	–	416 000	–	–
S.2.4	Personnel Services	12.0	27.0	4 378 000	–	–	4 563 000	–	–
	Additional high–priority activities	–	–	105 000	–	–	109 000	–	–
S.2.5	Budget and Finance	22.0	50.0	6 378 000	–	–	6 657 000	–	–
S.2.6	Staff Council	–	–	195 000	–	–	204 000	–	–
S.2	Administration	56.0	103.0	15 683 000	–	–	16 361 000	–	–
	Additional high–priority activities	–	–	211 000	–	–	220 000	–	–

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME S.2

ADMINISTRATION

Subprogramme S.2.1 - External Relations

S/6. The mission of the Division of External Relations is to function as the Agency's policy co-ordinating office and to serve as liaison with States and international organizations. It is planned to maintain the policy role of the Division in the area of safeguards and non-proliferation, including: the negotiation of new safeguards agreements and subsidiary arrangements; contribution towards the establishment of nuclear-weapon-free zones in the Middle East and Africa; and the preparation and follow-up of the 1995 Conference of the Parties to the Treaty on the Non-proliferation of Nuclear Weapons.

S/7. In addition, the Division will continue to have a co-ordinating role in the areas of Agency assistance to the Newly Independent States, contributions to sustainable development, United Nations Common System policy and Host Country relations.

S/8. A number of new policy initiatives in the field of arms control foresee a verification role for the Agency. As a result, increased tasks could be assigned to the Division that would require additional financial and human resources ($264 000), as indicated under subprogramme J.1.

Subprogramme S.2.2 - Legal Services

S/9. The mission of the Legal Division (ADLG) is to function as the Agency's legal adviser's office providing legal advice to the Policy-making Organs and to all units of the Secretariat as well as to Member States, and to implement legal aspects of the Agency programme as a lead unit or in conjunction with other units of the Secretariat.

S/10. The functions include depositary functions, establishment of a comprehensive liability regime, assistance in the operation of a nuclear safety convention, and assistance in the preparation of meetings on an international convention on the safety of waste management. ADLG is also expected to respond positively to requests of Member States, in particular those which recently joined or will join the Agency, for provision of expert advice on nuclear legislation. In the area of safeguards and non-proliferation, new safeguards agreements will be required and, in addition to the work in connection with the 1995 Conference of the Parties to the Treaty on the Non-proliferation of Nuclear Weapons, expanded activities may be necessary.

S/11. While the level of resources allocated has been held at 1994 levels, total additional high priority activities in 1995 and 1996 for both expert advice on nuclear legislation and possible new tasks in the area of nuclear control could amount to $264 000, which the current level of regular budget funds would not be sufficient to finance. These costs are noted in part under safeguards subprogramme J.1.

Subprogramme S.2.3 - Management Services

S/12. The mission of the Office of Management Services is to function as the Agency's internal management consultants, providing advice, support, training and assistance in initiatives to improve management and operating practices.

Subprogramme S.2.4 - Personnel Services

S/13. The mission of the Division of Personnel is to: ensure that the Agency has at all times the required human resources to carry out its programmes; develop and implement the conditions of employment within the framework of the United Nations Common System; and maintain effective control over staff costs.

S/14. The emphasis will be on the implementation of resolutions GC(XXXVII)/RES/621 and GC(XXXVII)/RES/622 as well as on improving personnel management systems such as staff training and performance appraisal in order to ensure optimum utilization of staffing resources.

S/15. It is expected that the level of regular budget funds allocated in 1994 will be sufficient to finance activities in 1995 and 1996. However, for the further enhancement of the Junior Professional Officer programme, as requested in operative paragraph 3(e) of resolution GC(XXXVII)/RES/622, additional resources would be required ($105 000).

Subprogramme S.2.5 - Budget and Finance

S/16. The mission of the Division of Budget and Finance is to direct, co-ordinate and monitor the Agency's finances, accounts and programme budget.

S/17. Emphasis will be shifted from the design stage of a new payroll system to the implementation phase and further improvements as required. Emphasis will also have to be placed on further refinements and enhancements of the Financial Information and Control System (FICS) in order to meet expected changes in requirements resulting from policy and other management decisions in the Agency. The revised Financial Regulations and Rules will become operative during 1995 and 1996.

S/18. It is expected that the level of regular budget funds allocated in 1994 will be sufficient to finance activities in 1995 and 1996. In the event of additional requirements, extrabudgetary resources will be solicited as in the past.

Subprogramme S.2.7 - Conference Services

S/19. The mission of the Conference Services Section is to function as the organizer of Agency meetings by providing administrative support and to co-ordinate meetings held at Headquarters and elsewhere. The resources required will be held at the current level.

PROGRAMME S.3: TECHNICAL CO-OPERATION SERVICING AND CO-ORDINATION

Summary of Regular Budget estimates by subprogramme

Table 49

	Subprogramme	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.3.1	Technical Co-operation Programmes	3 978 000	49 000	1.2	4 027 000	75 000	1.9	4 102 000	5.8	4 260 000	4.3	4 526 000
S.3.2	Technical Co-operation Implementation	4 715 000	97 000	2.1	4 812 000	–	–	4 812 000	5.3	5 066 000	4.3	5 286 000
	Additional high-priority activities	44 000	46 000	104.6	90 000	–	–	90 000	5.3	95 000	4.3	99 000
S.3.3	Technical Co-operation Programme Co-ordination	945 000	49 000	5.2	994 000	–	–	994 000	5.2	1 046 000	4.1	1 089 000
S.3.4	Technical Co-operation Evaluation	695 000	(3 000)	(0.4)	692 000	–	–	692 000	5.6	731 000	4.0	760 000
	Additional high-priority activities	10 000	30 000	300.0	40 000	–	–	40 000	5.6	42 000	4.0	44 000
S.3.5	TC Information Systems Unit	661 000	(1 000)	(0.2)	660 000	–	–	660 000	4.8	692 000	3.9	719 000
	Additional high-priority activities	–	145 000	–	145 000	–	–	145 000	4.8	152 000	3.9	158 000
S.3	TC Servicing and Coordination	10 994 000	191 000	1.7	11 185 000	75 000	0.7	11 260 000	5.5	11 795 000	4.3	12 380 000
	Additional high-priority activities	54 000	221 000	409.3	275 000	–	–	275 000	5.1	289 000	4.2	301 000

Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

List of projects and estimated total resources for 1995 and 1996

Table 50

Project Codes		1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Extra-Budgetary	TACF a/	Estimated Total Resources for 1996 Regular Budget	Extra-Budgetary	TACF a/
S.3.1	Technical Co-operation Programme	23.0	20.0	4 260 000	61 000	7 866 000	4 526 000	61 000	7 866 000
S.3.2	Technical Co-operation Implementation	18.0	45.0	5 066 000	75 000	–	5 286 000	75 000	–
	Additional high-priority activities	–	–	95 000	–	–	99 000	–	–
S.3.3	Technical Co-operation Programme Co-ordination	5.0	7.0	1 046 000	134 000	–	1 089 000	–	–
S.3.4	Technical Co-operation Evaluation	4.0	3.0	731 000	–	–	760 000	–	–
	Additional high-priority activities	–	–	42 000	–	–	44 000	–	–
S.3.5	TC Information Systems Unit	2.0	3.0	692 000	110 000	–	719 000	110 000	–
	Additional high-priority activities	1.0	–	152 000	–	–	158 000	–	–
S.3	TC Servicing and Coordination	52.0	78.0	11 795 000	380 000	7 866 000	12 380 000	246 000	7 866 000
	Additional high-priority activities	1.0	–	289 000	–	–	301 000	–	–

a/ Includes UNDP and footnote a/ amounts where applicable. All amounts are initial and tentative estimates.
Note: Additional high-priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME S.3

TECHNICAL CO-OPERATION SERVICING AND CO-ORDINATION

S/20. The operation of the Department of Technical Co-operation in the years 1995-96 will be directly affected by significant additional workloads related to:

(a) Attending to requests from new Member States in eastern Europe and central Asia;
(b) Model project initiatives which are oriented to give the basis for a comprehensive change in TC towards improving quality and cost effectiveness;
(c) The implementation of the External Auditor's recommendation to prepare country plans for nuclear related activities in close consultation with national development priorities and UNDP programmes.

S/21. Accordingly the programme is being allocated additional resources in 1995 and 1996. Additional resources are allocated to S.3.1 in response to (a) above. Also, $190 000 in each year, divided between subprogrammes S.3.2 and S.3.3, is provided for efforts related to (b) and (c) above.

Subprogramme S.3.1 - Technical Co-operation Programmes

S/22. Through a transfer from subprogramme S.3.3, it is expected that the basic activities of this subprogramme can be funded. However, in order to accommodate the needs of new Member States, additional resources including staff have been allowed for by using savings in 1995 and by an increased budget allocation of $30 000 in 1995 and $105 000 in 1996.

S/23. The projected extrabudgetary resources will comprise 1 cost-free expert.

Subprogramme S.3.2 - Technical Co-operation Implementation

S/24. Additional resources have been allocated to support and ensure the successful implementation of model projects and also to meet the needs of new Member States. The Division will undergo a transitional period of reorganization to achieve cost effectiveness and an increased level of automation. Support of $95 000 in each year is an additional high priority requirement for the same purpose.

S/25. The projected extrabudgetary resources will comprise 1 cost-free expert.

Subprogramme S.3.3 - Technical Co-operation Programme Co-ordination

S/26. The estimates reflect the full separation of subprogramme S.3.5, the Information Systems Unit (this separation was initiated in 1990 to implement the computing decentralization policy of the Agency). They also reflect the transfer to S.3.1. Additional resources have been allocated

($90 000 each year) to implement the External Auditor's recommendations to prepare country plans and to cover other activities expected to follow from the policy review seminar to be held in September 1994.

S/27. The projected extrabudgetary resources will comprise 1 cost-free expert.

Subprogramme S.3.4 - Technical Co-operation Evaluation

S/28. Regular budget resources at the 1994 level are considered adequate. However, additional activity in this area is regarded as desirable and Member State support and participation is invited as is indicated by the proposed additional high priority activity.

Subprogramme S.3.5 - TC Information Systems Unit

S/29. If regular budget resources have to remain at the 1994 level, additional resources would be needed for updating of software ($42 000 each year) and hardware ($31 000 each year) and for the custom development of a special TC system through contracted programming ($79 000 for 1995 and 1996).

S/30. The projected extrabudgetary resources will comprise 1 cost-free expert and $30 000 in hardware.

PROGRAMME S.4: GENERAL SERVICES
Summary of Regular Budget estimates by subprogramme
Table 51

	Subprogramme	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.4.1	VIC Maintenance and Operations	12 106 000	(150 000)	(1.2)	11 956 000	–	–	11 956 000	4.2	12 462 000	4.2	12 990 000
	Additional high–priority activities	1 569 000	–	–	1 569 000	–	–	1 569 000	4.2	1 635 000	4.2	1 704 000
S.4.2	Other General Services	9 327 000	(2 000)	(0.02)	9 325 000	–	–	9 325 000	4.3	9 722 000	4.0	10 115 000
S.4	General Services	21 433 000	(152 000)	(0.7)	21 281 000	–	–	21 281 000	4.2	22 184 000	4.2	23 105 000
	Additional high–priority activities	1 569 000	–	–	1 569 000	–	–	1 569 000	4.2	1 635 000	4.2	1 704 000

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

List of projects and estimated total resources for 1995 and 1996
Table 52

Project Codes		1995 Staffing P	GS	Estimated Total Resources for 1995 Regular Budget	Extra–Budgetary	TACF	Estimated Total Resources for 1996 Regular Budget	Extra–Budgetary	TACF
S.4.1	VIC Maintenance and Operations	–	–	12 462 000	–	–	12 990 000	–	–
	Additional high–priority activities	–	–	1 635 000	–	–	1 704 000	–	–
S.4.2	Other General Services	10.0	104.0	9 722 000	–	–	10 115 000	–	–
S.4	General Services	10.0	104.0	22 184 000	–	–	23 105 000	–	–
	Additional high–priority activities	–	–	1 635 000	–	–	1 704 000	–	–

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

PROGRAMME S.4

GENERAL SERVICES

Subprogramme S.4.1 - VIC Maintenance and Operation

S/31. Responsibility for the maintenance and operation of the VIC rests with UNIDO Buildings Management Services and the United Nations Security and Safety Service. The costs will continue to be shared among the organizations. Under the present budgetary restrictions, the Agency will do everything possible to economize on costs of operation and maintenance and a decrease of $150 000 is foreseen for 1995 and 1996. It should be noted that the reduction proposed is not without risk to the timely provision of services and maintenance.

S/32. As the Board has been informed before, the Agency and the other organizations at the VIC require a new telephone system. This need is becoming more urgent as the Agency's various activities require a level of communications that can no longer be met by the present system. Negotiations have started but not yet been concluded with the Austrian Government on the installation of a new system. Installation is expected in 1995 and 1996. If the Agency is required to bear a share of the cost, an amount of $1 635 000 may be required in 1995 and a similar amount again in 1996 (additional high priority activity). It should be noted that these figures are based on a specific system concept and cost estimates made in 1991. They will need to be reviewed when the intentions of all parties become clearer.

S.4.2 - Other General Services

S/33. The mission of the Division of General Services is to provide general services to the Agency and to participate in the financial and technical management of the VIC.

S/34. Resources provided for common services (communications, freight and transportation, rental and maintenance of equipment, etc.), office furniture and equipment will remain at the same level as in 1994.

PROGRAMME S.5: SPECIALIZED SERVICE ACTIVITIES
Summary of Regular Budget estimates by subprogramme
Table 53

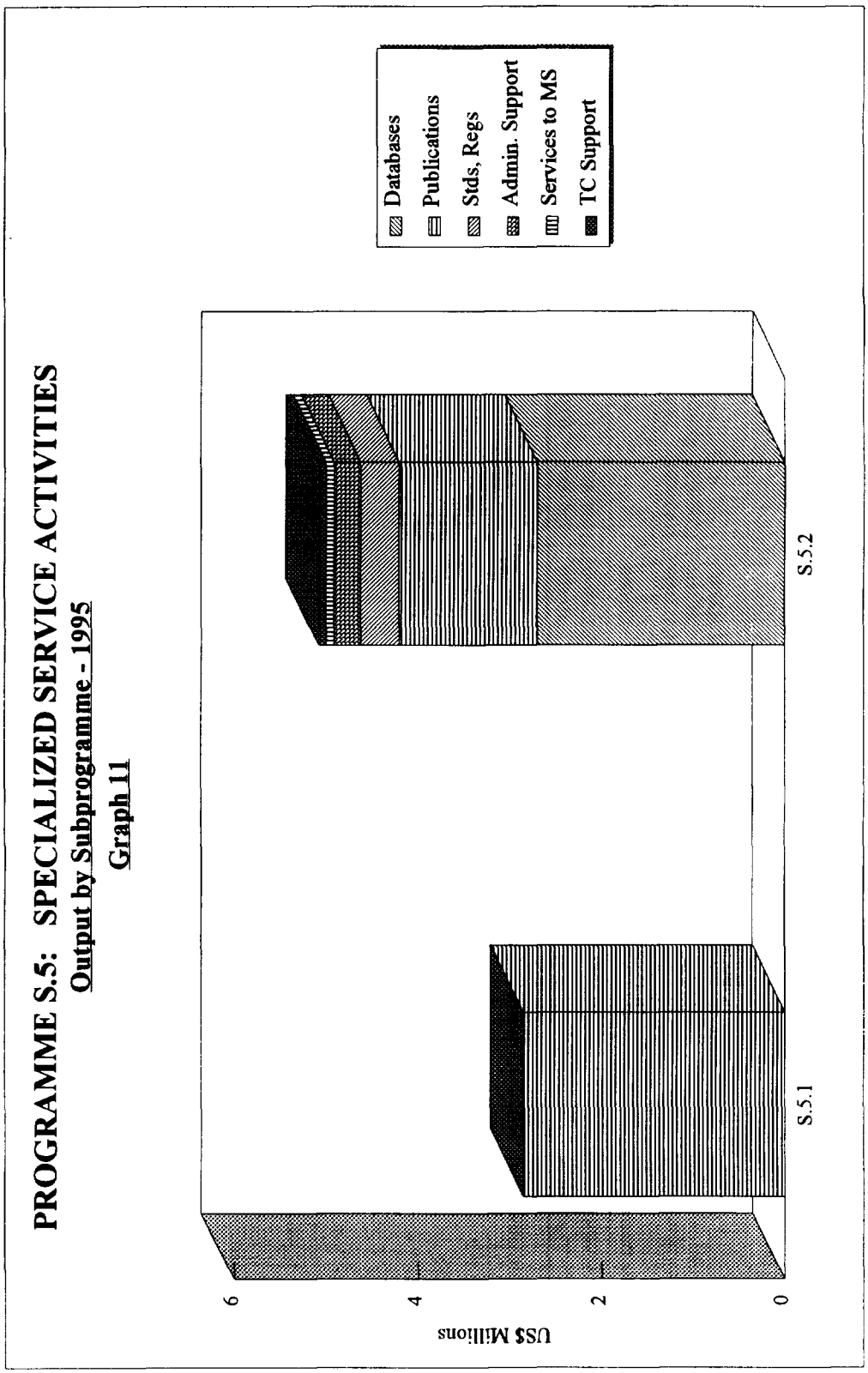
	Subprogramme	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.5.1	Public Information	2 730 000	(8 000)	(0.3)	2 722 000	–	–	2 722 000	5.0	2 858 000	4.3	2 981 000
	Additional high–priority activities	–	200 000	–	200 000	(200 000)	(100.0)	–	5.0	210 000	–	–
S.5.2	International Nuclear Information System (INIS)	4 951 000	(396 000)	(8.0)	4 555 000	(140 000)	(3.1)	4 415 000	5.1	4 788 000	4.2	4 839 000
	NESI – Office of the Director	277 000	(1 000)	(0.4)	276 000	–	–	276 000	5.4	291 000	4.1	303 000
S.5	Specialized Service Activities	7 958 000	(405 000)	(5.1)	7 553 000	(140 000)	(1.9)	7 413 000	5.1	7 937 000	4.3	8 123 000
	Additional high–priority activities	–	200 000	–	200 000	(200 000)	(100.0)	–	5.0	210 000	–	–

Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.

List of projects and estimated total resources for 1995 and 1996
Table 54

Project Codes		1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Extra–Budgetary	TACF a_/	Estimated Total Resources for 1996 Regular Budget	Extra–Budgetary	TACF a_/
S.5.1	Public Information	5.0	10.0	2 858 000	540 000	–	2 981 000	540 000	–
	Additional high–priority activities	–	–	210 000	–	–	–	–	–
S.5.2	International Nuclear Information System	17.0	27.0	4 788 000	–	161 000	4 839 000	–	161 000
	NESI – Office of the Director	1.0	2.0	291 000	–	–	303 000	–	–
S.5	Specialized Service Activities	23.0	39.0	7 937 000	540 000	161 000	8 123 000	540 000	161 000
	Additional high–priority activities	–	–	210 000	–	–	–	–	–

a_/ Includes UNDP and footnote a_/ amounts where applicable. All amounts are initial and tentative estimates.
Note: Additional high–priority activities are those which cannot be funded within the expected level of Regular Budget resources.


PROGRAMME S.5: SPECIALIZED SERVICE ACTIVITIES
Output by Subprogramme - 1995
Graph 11
Databases
Publications
Stds, Regs
Admin. Support
Services to MS
TC Support
US$ Millions
0
2
4
6
S.5.1
S.5.2

PROGRAMME S.5

SPECIALIZED SERVICE ACTIVITIES

Subprogramme S.5.1 - Public Information

S/35. The mission of the Division of Public Information is to contribute to public understanding both of the Agency's activities and of nuclear and non-proliferation related issues in general, and to communicate a balanced perspective of the value of international co-operation in various peaceful applications of nuclear energy.

S/36. The Public Information services will continue to focus on contacts with the press and the public, Agency periodicals, visitors, information services and audio-visual media. While it is difficult to predict the precise subjects to be covered in information brochures, it can be anticipated that these will include new trends in safeguards related activities, TC model projects, the implications of a safety convention, the Agency in the context of the 50th anniversary of the United Nations in 1995, waste management, nuclear power in relation to environmental concerns, measures to deal with ageing problems in power reactors and the peaceful applications of nuclear energy in industry and agriculture. The offering of short video clips on these and other topical items for television use will be explored. It is expected that extrabudgetary resources will again be made available, as in the past, for regional/national seminars for journalists and educators and supporting materials ($540 000 each year, not yet confirmed).

S/37. The demand for information relating to the Agency's verification responsibilities dictate the need for additional resources in this area ($105 000); these are indicated under subprogramme J.3. Another major item that cannot be accommodated within regular budget resources would be a new corporate film on the Agency to replace "For The Benefit of Humanity" dating from 1987. This film would inter alia be used as part of a revitalized Visitors Service programme at the VIC. Costs — which would require extrabudgetary support — are estimated at $210 000.

Subprogramme S.5.2 - International Nuclear Information System (INIS)

Main Accomplishments (1991-94)

S/38. Six Member States (Albania, Ethiopia, Kenya, Nicaragua, Slovakia and Slovenia) and two international organizations (Arab Atomic Energy Agency, WMO) jointed INIS, bringing the number of participating Member States to 86, together with 17 international organizations.

S/39. During the past three years, 256 795 items of literature were processed and announced in *INIS Atomindex*, bringing the database up to about 1.7 million records. The database was distributed to 75 countries and international organizations, either on CD-ROM or on magnetic tape. All Agency Member States received *INIS Atomindex* in printed or microfiche form.

S/40. The number of microfiche produced and distributed to the Member States amounts to 1 263 442. These represent the full text of more than 36 000 research reports, theses, etc. entered into the INIS database.

S/41. An expert system, whose logic and algorithms were developed by the Secretariat, has been implemented for checking the quality of the input to the INIS database. It is now the basis for quality control operations in processing the input data.

S/42. The INIS User Needs Study, aimed at identifying the information needs of end users, a feasibility study on the utilization of optical disk technology for storage of the full text of reports as an alternative to the microfiche technology, and the Subject Search Study aimed at identifying an effective approach in retrieving data, were launched to obtain information needed for developing a new strategy for INIS operations and for the future development in the period 1995-2000.

S/43. Since 1991, when the first version of the personal computer software package FIBRE (friendly inputting of bibliographic records) was distributed, FIBRE has become the main tool for input preparation in 48 Member States and international organizations.

Main Activities Planned for 1995-96

S/44. Reductions in printing will be made in 1995 and 1996, reflecting a decreased demand for hardcopy versions of *INIS Atomindex*. The requirements for new equipment will have been met by 1995, leading to some reductions. Greater reliance on INIS inputting centres for technical expertise will result in reduced costs of contracts in 1995 and 1996 and other efficiency gains.

S/45. The emphasis or directions to be given to the developments in this subprogramme will be aimed at: improving the efficiency, flexibility, ease of maintenance and user friendliness of the data processing system; adding to and improving the tools distributed to Member States for both input preparation and training; improving the availability and accessibility of the information contained in the database; improving the availability and accessibility of the full text of reported literature in optical or other electronic form; and putting a greater effort into expanding usage of the database and the information contained in it.

PROGRAMME S.6: SUPPORT SERVICES
Summary of Regular Budget estimates by subprogramme
Table 55

	Subprogramme	Respon. Division	1994 Budget (Adjusted)	Expenditure increase/(decrease)	%	1995 at 1994 prices	Expenditure increase/(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.6.1	Contracts Administration Services		543 000	–	–	543 000	–	–	543 000	4.8	569 000	4.0	592 000
S.6.3	Translation and Records Services		7 679 000	(351 000)	(4.6)	7 328 000	10 000	0.1	7 338 000	5.5	7 732 000	4.1	8 059 000
S.6.4	Medical Services		1 611 000	–	–	1 611 000	–	–	1 611 000	4.8	1 688 000	4.1	1 758 000
S.6.5	Library Services		3 338 000	(95 000)	(2.8)	3 243 000	–	–	3 243 000	5.8	3 432 000	5.2	3 609 000
S.6.6	DP Central Services		6 800 000	1 022 000	15.0	7 822 000	–	–	7 822 000	4.7	8 190 000	4.0	8 519 000
S.6.7	DP Applications Services		1 147 000	93 000	8.1	1 240 000	(98 000)	(7.9)	1 142 000	4.8	1 299 000	3.8	1 243 000
S.6.8	Printing Services		5 753 000	(517 000)	(9.0)	5 236 000	(57 000)	(1.1)	5 179 000	4.5	5 471 000	4.4	5 647 000
S.6.9	Publishing Services	a_/	2 925 000	(30 000)	(1.0)	2 895 000	(90 000)	(3.1)	2 805 000	5.3	3 047 000	4.3	3 081 000
	Nuclear Fusion Journal		351 000	(42 000)	(12.0)	309 000	–	–	309 000	5.2	325 000	4.3	339 000
S.6.10	Radiation Protection Services	b_/	956 000	–	–	956 000	–	–	956 000	5.0	1 004 000	4.3	1 047 000
	Sub–total		31 103 000	80 000	0.3	31 183 000	(235 000)	(0.8)	30 948 000	5.0	32 757 000	4.3	33 894 000
Less:	cross–charge										412 000		427 000
Total:	Support Services										32 345 000		33 467 000
Allocated cost:													
	to Agency programmes under the Regular Budget										17 123 000		17 674 000
	to other organizations, customers and TC projects (reimbursable work for others)										6 040 000		6 298 000
Sub–total: Allocated cost											23 163 000		23 972 000
Unallocated Services:													
	DP Central Services										4 092 000		4 259 000
	Publishing Services										2 916 000		2 944 000
	Sub–total – Unallocated Services										7 008 000		7 203 000
Agency's Share of the Library		c_/									2 174 000		2 292 000
S.6. Unallocated Services and Library		d_/									9 182 000		9 495 000
Total:	Support Services										32 345 000		33 467 000

a_/ The Scientific Journals Unit which deals with the Nuclear Fusion Journal has been transferred to the Publishing Section.
b_/ See footnote on table 56.
c_/ See footnote on table 44.
d_/ S.6. Support Services consists of all Unallocated Services and the Agency's share of the Library, all other support services having been allocated to the Agency user programmes and Reimbursable Work for Others.

PROGRAMME S.6: SUPPORT SERVICES
List of projects and estimated total resources for 1995 and 1996
Table 56

Project Codes		1995 Staffing P	1995 Staffing GS	Estimated Total Resources for 1995 Regular Budget	Estimated Total Resources for 1995 Extra-Budgetary	Estimated Total Resources for 1995 TACF	Estimated Total Resources for 1996 Regular Budget	Estimated Total Resources for 1996 Extra-Budgetary	Estimated Total Resources for 1996 TACF
S.6.1	Contracts Administration Services	1.0	5.0	569 000	–	–	592 000	–	–
S.6.3	Translation and Records Services	48.0	49.0	7 732 000	–	–	8 059 000	–	–
S.6.4	Medical Services	3.0	17.0	1 688 000	–	–	1 758 000	–	–
S.6.5	Library Services	4.0	10.0	3 432 000	–	–	3 609 000	–	–
S.6.6	DP Central Services	24.0	33.0	8 190 000	–	–	8 519 000	–	–
S.6.7	DP Applications Services	5.0	3.0	1 299 000	–	–	1 243 000	–	–
S.6.8	Printing Services	1.0	63.0	5 471 000	–	–	5 647 000	–	–
S.6.9	Publishing Services	12.0	32.0	3 047 000	–	–	3 081 000	–	–
	Nuclear Fusion Journal	–	–	325 000	–	–	339 000	–	–
S.6.10	Radiation Protection Services a/	3.0	7.0	1 004 000	–	–	1 047 000	–	–
S.6	Support Services	101.0	219.0	32 757 000	–	–	33 894 000	–	–

a/ The costs of the radiation protection services are shared between the Agency's programmes and reimbursable work for others.

PROGRAMME S.6

SUPPORT SERVICES

S/46. The following support services will continue their operation as in the previous programme and budget cycle:

- Contracts Administration Services
- Translation and Records Services
- Medical Services
- Library Services
- DP Application Services
- Printing Services: reductions in the budget of the Printing Services will be made in accordance with total requirements for the services of this Section
- Radiation Protection Services.

S/47. These services will continue to be allocated to user programmes.

S/48. As in the past programme and budget cycle, the following services will not be allocated to other programmes:

- Agency's Share of the Library
- DP Central Services
- Publishing Services.

S.6.5: Agency's Share of the Library and S.6.7: DP Central Services

S/49. Resources will be held at current levels for both services.

S.6.9: Publishing Services

S/50. The overall budgetary requirements for Publishing Services have declined as a result of efficiency gains. The *Nuclear Fusion* journal continues to be funded outside the regular budget through sales income and page charges to authors.

ANNEXES I – X

ANNEX I

CONFERENCES, SYMPOSIA AND SEMINARS IN 1995

NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT

1. Symposium on Electricity, Health and the Environment: Data Bases and Methodologies for Comparative Assessment (X.04)

2. Symposium on Environmental Impact of Radioactive Releases (C.4.03/C.4.07)

3. Seminar on the Requirements for the Safe Management of Radioactive Waste (C.5.02)

4. Seminar on the Use of Isotope Techniques in Marine Environmental Studies (C.4.07)

NUCLEAR APPLICATIONS

5. Symposium on Isotope Techniques in Water Resources Development (F.2.01)

6. Symposium on Tomography in Nuclear Medicine, Present Status and Future Prospects (E.1.03)

7. Symposium on Induction of Mutations and Use of Molecular Techniques in Breeding for Crop Improvement (D.2.GA)

8. Joint FAO/IAEA seminar for Africa on animal trypanosomiasis: vector and disease control using nuclear techniques [1] (D.4.02)

9. Regional Seminar for Asia and Pacific on Radiotherapy Dosimetry: Radiation Dose in Radiotherapy from Prescription to Delivery (E.3.03)

NUCLEAR SAFETY AND RADIATION PROTECTION

10. Conference on Operational Safety Advances at Nuclear Power Plants (I.3.01)

11. Seminar on Management of Ageing in Research Reactors (I.4.02)

12. Seminar on the Advancements in the Implementation of the New Basic Safety Standards (Experience in applying the 1990 Recommendations of ICRP) (H.1.01)

SAFEGUARDS

13. Seminar on Safeguards Accounting Data and Reporting (J.1.04)

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[1] Postponed from 1994

ANNEX II

CONFERENCES, SYMPOSIA AND SEMINARS IN 1996

NUCLEAR POWER, FUEL CYCLE AND RADIOACTIVE WASTE MANAGEMENT

1. 16th International Conference on Plasma Physics and Controlled Nuclear Fusion Research (A.4.01)

2. Symposium on Experience in the Planning and Operation of Low Level Waste Disposal Facilities (C.2.01)

NUCLEAR APPLICATIONS

3. FAO/IAEA Symposium on the Use of Nuclear and Related Techniques for Studying Environmental Behaviour of Crop Protection Chemicals (D.5.GA)

4. Symposium on Harmonization of Health-Related Environmental Measurements Using Nuclear Analytical Techniques (E.4.02)

5. FAO/IAEA Seminar on Integration of Food Irradiation in Post-Harvest Food Processing in Africa (D.6.01)

6. Seminar on Nuclear Techniques Related to the Diagnosis and Management of Cancer (E.1.06)

7. International Seminar on the Enhancement of Utilization of Research and Test Reactors (G.4.01)

NUCLEAR SAFETY AND RADIATION PROTECTION

8. International Conference on one Decade after Chernobyl: Summing up the Radiological Consequences (H.3.03)

9. Symposium on Reviewing the Safety of Existing Nuclear Power Plants (I.7.01)

SAFEGUARDS

10. Safeguards 1996 and Beyond: A Seminar on the Nuclear Approaches to be Implemented by the Agency (J.2.07)

DIRECTION AND SUPPORT

11. INIS Training Seminar (S.5.2)

Summary of Output for the 1995 Regular Budget

Table 57

	Subprogramme		Major Meetings	Data bases	Publi-cations	Standards, regula-tions	Safeguards implemen-tation	Research & devel-opment	Admin. sup-port and management	Services to Member States	TC Support	Total
A.1	Nuclear Power Planning and Implementation	NENP	-	124 000	647 000	-	-	-	-	-	529 000	1 300 000
A.2	Assessment and Improvement of Nuclear Power Plant Performance	NENP	-	238 000	790 000	120 000	-	131 000	-	47 000	179 000	1 505 000
A.3	Advanced Reactor Developments and Applications (Combination of old A.3 and A.4)	NENP	-	-	938 000	-	-	537 000	-	-	106 000	1 581 000
A.4	Nuclear Fusion (Old A.5)	NENP	-	-	34 000	-	-	45 000	-	-	-	79 000
		a_/ ADPU	-	-	[456 000]	-	-	-	-	-	-	[456 000]
		RIPC	22 000	-	240 000	-	-	204 000	-	76 000	4 000	546 000
Programme A - Nuclear Power			22 000	362 000	2 649 000	120 000	-	917 000	-	123 000	818 000	5 011 000
B.1	Raw Materials for Reactor Fuels	NENF	-	80 000	340 000	-	-	-	-	-	63 000	483 000
B.2	Reactor Fuel Technology and Performance	NENF	-	-	294 000	-	-	329 000	-	-	48 000	671 000
B.3	Spent Fuel Management, Technology and Safety	NENF	-	36 000	392 000	241 000	-	319 000	-	51 000	60 000	1 099 000
B.4	Information on the Nuclear Fuel Cycle	NENF	-	124 000	192 000	26 000	-	-	-	-	-	342 000
Programme B - Nuclear Fuel Cycle			-	240 000	1 218 000	267 000	-	648 000	-	51 000	171 000	2 595 000
C.1	Handling, Treatment, Conditioning and Storage of Radioactive Wastes	NENF	-	37 000	298 000	33 000	-	340 000	-	16 000	124 000	848 000
C.2	Radioactive Waste Disposal	NENF	6 000	-	355 000	-	-	155 000	-	-	29 000	545 000
C.3	Decontamination and Decommissioning of Nuclear Installations	NENF	-	-	367 000	-	-	107 000	-	-	15 000	489 000
C.4	Radiological and Environmental Aspects of Waste Management	NENF	72 000	40 000	378 000	-	-	204 000	-	28 000	14 000	736 000
		RIML	94 000	94 000	146 000	-	-	604 000	-	676 000	448 000	2 062 000
C.5	Waste Management Planning and Infrastructure	NENF	44 000	58 000	295 000	819 000	-	-	-	55 000	222 000	1 493 000
Programme C - Radioactive Waste Management			216 000	229 000	1 839 000	852 000	-	1 410 000	-	775 000	852 000	6 173 000

a_/ The Nuclear Fusion Journal is funded by income from sales and page charges. The cost is shown for information only.

Summary of Output for the 1995 Regular Budget

Table 57

	Subprogramme		Major Meetings	Data bases	Publi-cations	Standards, regula-tions	Safeguards implemen-tation	Research & devel-opment	Admin. sup-port and management	Services to Member States	TC Support	Total
X	Comparative Assessment of	NENP	145 000	272 000	748 000	-	-	164 000	-	38 000	78 000	1 445 000
	Nuclear Power and Other	NENF	-	16 000	169 000	-	-	-	-	-	-	185 000
	Energy Sources	NENS	-	104 000	136 000	-	-	71 000	-	38 000	37 000	386 000
Subprogramme X			145 000	392 000	1 053 000	-	-	235 000	-	76 000	115 000	2 016 000
Major Prog. 1 - Nuclear Power, Fuel Cycle and Radioactive Waste Management			383 000	1 223 000	6 759 000	1 239 000	-	3 210 000	-	1 025 000	1 956 000	15 795 000
D.1	Soil Fertility, Irrigation and Crop Production	RIFA/ RIAL	-	-	94 000	-	-	1 324 000	-	215 000	898 000	2 531 000
D.2	Plant Breeding and Genetics	RIFA/ RIAL	84 000	-	59 000	-	-	834 000	-	72 000	628 000	1 677 000
D.3	Animal Production and Health	RIFA/ RIAL	-	-	57 000	-	-	787 000	-	138 000	531 000	1 513 000
D.4	Insect and Pest Control	RIFA/ RIAL	40 000	-	58 000	-	-	1 125 000	-	69 000	1 007 000	2 299 000
D.5	Agrochemicals and Residues	RIFA/ RIAL	-	-	45 000	-	-	740 000	-	53 000	379 000	1 217 000
D.6	Food Preservation	RIFA	-	-	113 000	23 000	-	474 000	-	205 000	46 000	861 000
Programme D - Food and Agriculture			124 000	-	426 000	23 000	-	5 284 000	-	752 000	3 489 000	10 098 000
E.1	Nuclear Medicine	RIHU	75 000	-	-	-	-	923 000	-	35 000	282 000	1 315 000
E.2	Applied Radiation Biology and Radiotherapy	RIHU	-	-	-	-	-	820 000	-	54 000	126 000	1 000 000
E.3	Dosimetry	RIHU/ RIAL	27 000	41 000	118 000	-	-	762 000	-	310 000	349 000	1 607 000
E.4	Nutritional and Health-related Environmental Studies	RIHU/ RIAL	-	-	42 000	-	-	896 000	-	-	431 000	1 369 000
		RIML	21 000	16 000	52 000	-	-	103 000	-	97 000	103 000	392 000
Programme E - Human Health			123 000	57 000	212 000	-	-	3 504 000	-	496 000	1 291 000	5 683 000

Summary of Output for the 1995 Regular Budget

Table 57

	Subprogramme		Major Meetings	Data bases	Publi-cations	Standards, regula-tions	Safeguards implemen-tation	Research & devel-opment	Admin. sup-port and management	Services to Member States	TC Support	Total
F 1	Industrial Applications	RIPC	-	-	195 000	-	-	576 000	-	-	153 000	924 000
F.2	Development of Water Resources	RIPC/ RIAL	80 000	-	63 000	-	-	1 262 000	-	76 000	995 000	2 476 000
Programme F - Industry and Earth Sciences			80 000	-	258 000	-	-	1 838 000	-	76 000	1 148 000	3 400 000
G.1	Nuclear and Atomic Data for Applications	RIPC	-	820 000	627 000	-	-	582 000	-	123 000	160 000	2 312 000
G.2	Nuclear Instrumentation	RIPC/ RIAL	-	-	145 000	-	-	923 000	-	5 000	976 000	2 049 000
		RIHU	-	-	-	-	-	177 000	-	17 000	73 000	267 000
G.3	Theoretical Physics	RITP	257 000	-	170 000	-	-	342 000	-	-	945 000	1 714 000
G.4	Utilization of Research Reactors and Particle Accelerators	RIPC/ RIAL	-	37 000	170 000	-	-	204 000	-	27 000	41 000	479 000
G.5	Chemistry	RIPC/ RIAL	-	-	70 000	-	-	833 000	-	-	588 000	1 491 000
Programme G - Physical and Chemical Sciences			257 000	857 000	1 182 000	-	-	3 061 000	-	172 000	2 783 000	8 312 000
Major Programme 2 - Nuclear Applications			584 000	914 000	2 078 000	23 000	-	13 687 000	-	1 496 000	8 711 000	27 493 000
H.1	Strengthening of Radiation Safety	NENS	61 000	7 000	166 000	227 000	-	-	-	13 000	314 000	788 000
H.2	Occupational Radiation Protection	NENS	-	77 000	131 000	248 000	-	215 000	-	33 000	86 000	790 000
H.3	Radiation Protection of the Public and the Environment (Merged with old H.8)	NENS	18 000	51 000	106 000	214 000	-	179 000	-	11 000	74 000	653 000
H.4	Safe Transport of Radioactive Material	NENS	-	38 000	62 000	195 000	-	146 000	-	42 000	36 000	519 000
H.5	Emergency Preparedness	NENS	-	-	88 000	129 000	-	-	-	207 000	105 000	529 000
H.6	Safety of Radiation Sources	NENS	-	76 000	116 000	-	-	235 000	-	75 000	107 000	609 000
H 7	Radiation Safety Services	NENS	-	-	-	-	-	-	165 000	-	347 000	512 000
Programme H - Radiation Safety			79 000	249 000	669 000	1 013 000	-	775 000	165 000	381 000	1 069 000	4 400 000

Summary of Output for the 1995 Regular Budget
Table 57

	Subprogramme		Major Meetings	Data bases	Publi-cations	Standards, regula-tions	Safeguards implemen-tation	Research & devel-opment	Admin. sup-port and management	Services to Member States	TC Support	Total
I.1	Strengthening Basic Nuclear Safety	NENS	5 000	26 000	174 000	415 000	-	-	-	387 000	136 000	1 143 000
I.2	Engineering Safety Issues of Nuclear Power Plants (Merged with old I.5)	NENS	-	29 000	341 000	182 000	-	218 000	-	91 000	243 000	1 104 000
I.3	Operational Safety of Nuclear Power Plants (Merged with old I.4)	NENS	90 000	226 000	561 000	101 000	-	-	-	1 089 000	223 000	2 290 000
I.4	Research Reactor Safety (Old I.6)	NENS	58 000	164 000	64 000	165 000	-	49 000	-	90 000	151 000	741 000
I.5	Nuclear Safety Assessment Practices (Old I.7)	NENS	-	51 000	307 000	95 000	-	81 000	-	86 000	47 000	667 000
I.6	Safety Approaches to Future Nuclear Power Plants (Old I.8)	NENS	-	-	175 000	-	-	-	-	-	-	175 000
I.7	Safety Reassessment of Nuclear Power Plants (Old I.9)	NENS	-	-	104 000	37 000	-	-	-	108 000	4 000	253 000
I.8	Safety Appraisals of Facilities Established Under Project Agreements with the Agency (Old I.10)	NENS	-	-	-	-	-	-	-	126 000	-	126 000
I.9	Communication with the Public (Old I.11)	NENS	-	90 000	36 000	-	-	-	-	63 000	5 000	194 000
Programme I - Safety of Nuclear Installations			153 000	586 000	1 762 000	995 000	-	348 000	-	2 040 000	809 000	6 693 000
Major Programme 3 - Nuclear Safety and Radiation Protection			232 000	835 000	2 431 000	2 008 000	-	1 123 000	165 000	2 421 000	1 878 000	11 093 000
J.1	Safeguards Operations		-	5 002 000	-	-	51 031 000	-	-	-	-	56 033 000
J.2	Safeguards Support and Development		-	3 828 000	-	1 279 000	2 977 000	6 020 000	-	-	-	14 104 000
J.3	Safeguards Management	DDG-SG	-	-	-	-	-	-	[323 000]	-	-	[323 000]
		SGSEE	-	-	-	-	998 000	-	-	-	-	998 000
		SGSPR	-	-	-	-	-	-	1 287 000	-	-	1 287 000
Major Programme 4 - Safeguards			-	8 830 000	-	1 279 000	55 006 000	6 020 000	1 287 000	-	-	72 422 000

Summary of Output for the 1995 Regular Budget
Table 57

	Subprogramme	Major Meetings	Data bases	Publi-cations	Standards, regula-tions	Safeguards implemen-tation	Research & devel-opment	Admin. sup-port and management	Services to Member States	TC Support	Total
S.1.1	General Management	-	-	-	-	-	-	3 688 000	-	-	3 688 000
S.1.2	Secretariat of the Policy-making Organs	-	-	-	-	-	-	7 360 000	-	-	7 360 000
S.1.3	Internal Audit and Evaluation Support	-	-	-	-	-	-	885 000	-	-	885 000
S.1	General Management and Secretariat of the Policy-making Organs	-	-	-	-	-	-	11 933 000	-	-	11 933 000
S.2	Administration	-	-	-	-	-	-	15 683 000	-	-	15 683 000
S.3	TC Servicing and Coordination	-	-	-	-	-	-	-	-	11 795 000	11 795 000
S.4	General Services	-	-	-	-	-	-	22 184 000	-	-	22 184 000
S.5.1	Public Information	-	-	2 858 000	-	-	-	-	-	-	2 858 000
S.5.2	International Nuclear Information System (INIS)	-	2 703 000	1 506 000	416 000	-	-	-	89 000	74 000	4 788 000
	NESI - Office of the Director	-	-	-	-	-	-	291 000	-	-	291 000
S.5	Specialized Service Activities	-	2 703 000	4 364 000	416 000	-	-	291 000	89 000	74 000	7 937 000
	Agency's Share of the Library	-	-	2 174 000	-	-	-	-	-	-	2 174 000
	Unallocated Services:										
	DP Central Services	-	2 046 000	-	-	-	-	2 046 000	-	-	4 092 000
	Publishing Services	-	-	2 916 000	-	-	-	-	-	-	2 916 000
S.6	Unallocated Services and Library	-	2 046 000	5 090 000	-	-	-	2 046 000	-	-	9 182 000
Major Programme S - Direction and Support		-	4 749 000	9 454 000	416 000	-	-	52 137 000	89 000	11 869 000	78 714 000

Agency's Programmes	1 199 000	16 551 000	20 722 000	4 965 000	55 006 000	24 040 000	53 589 000	5 031 000	24 414 000	205 517 000

Agency's Laboratory and Divisional Costs by Subprogramme

Table 58

				1995 Staffing P	1995 Staffing GS	1995 Estimates at 1995 prices	1996 Estimates at 1996 prices
D.1	Soil Fertility, Irrigation and Crop Production	RIFA		4.2	1.4	1 195 000	1 325 000
		RIAL	Staff / Direct Costs	4.4	6.9	882 000	920 000
			Site Operating Costs	–	–	454 000	453 000
				8.6	8.3	2 531 000	2 698 000
D.2	Plant Breeding and Genetics	RIFA		2.2	1.4	811 000	823 000
		RIAL	Staff / Direct Costs	2.5	7.1	513 000	536 000
			Site Operating Costs	–	–	353 000	348 000
				4.7	8.5	1 677 000	1 707 000
D.3	Animal Production and Health	RIFA		2.2	1.3	833 000	879 000
		RIAL	Staff / Direct Costs	1.4	4.3	364 000	381 000
			Site Operating Costs	–	–	316 000	314 000
				3.6	5.6	1 513 000	1 574 000
D.4	Insect and Pest Control	RIFA		2.1	1.3	775 000	817 000
		RIAL	Staff / Direct Costs	3.4	9.1	867 000	906 000
			Site Operating Costs	–	–	657 000	671 000
				5.5	10.4	2 299 000	2 394 000
D.5	Agrochemicals and Residues	RIFA		2.2	1.2	787 000	857 000
		RIAL	Staff / Direct Costs	1.3	1.5	262 000	273 000
			Site Operating Costs	–	–	168 000	175 000
				3.5	2.7	1 217 000	1 305 000
D.6	Food Preservation	RIFA		3.1	1.4	861 000	898 000
Programme D – Food and Agriculture		RIFA		16.0	8.0	5 262 000	5 599 000
		RIAL	Staff / Direct Costs	13.0	28.9	2 888 000	3 016 000
			Site Operating Costs	–	–	1 948 000	1 961 000
				29.0	36.9	10 098 000	10 576 000
E.1	Nuclear Medicine	RIHU		4.3	2.0	1 315 000	1 339 000
E.2	Applied Radiation Biology and Radiotherapy	RIHU		3.1	2.1	1 000 000	1 006 000
E.3	Dosimetry	RIHU		5.3	4.3	1 305 000	1 370 000
		RIAL	Staff / Direct Costs	0.4	2.3	165 000	172 000
			Site Operating Costs	–	–	137 000	131 000
				5.7	6.6	1 607 000	1 673 000
E.4	Nutritional and Health–related Environmental Studies	RIHU		2.2	2.2	738 000	797 000
		RIAL	Staff / Direct Costs	1.9	5.8	469 000	489 000
			Site Operating Costs	–	–	162 000	174 000
		RIML		0.9	2.8	392 000	404 000
				5.0	10.8	1 761 000	1 864 000
Programme E – Human Health		RIHU		14.9	10.6	4 358 000	4 512 000
		RIAL	Staff / Direct Costs	2.3	8.1	634 000	661 000
			Site Operating Costs	–	–	299 000	305 000
		RIML		0.9	2.8	392 000	404 000
				18.1	21.5	5 683 000	5 882 000

Agency's Laboratory and Divisional Costs by Subprogramme

Table 58 (Contd.)

				1995 Staffing P	1995 Staffing GS	1995 Estimates at 1995 prices	1996 Estimates at 1996 prices
F.1	Industrial Applications	RIPC		2.6	1.1	924 000	985 000
F.2	Development of Water Resources	RIPC		4.2	3.2	1 219 000	1 267 000
		RIAL	Staff / Direct Costs	4.4	11.7	1 137 000	1 185 000
			Site Operating Costs	–	–	120 000	125 000
				8.6	14.9	2 476 000	2 577 000
Programme F – Industry and Earth Sciences		RIPC		6.8	4.3	2 143 000	2 252 000
		RIAL	Staff / Direct Costs	4.4	11.7	1 137 000	1 185 000
			Site Operating Costs	–	–	120 000	125 000
				11.2	16.0	3 400 000	3 562 000
G.1	Nuclear and Atomic Data for Applications	RIPC		12.4	10.4	2 312 000	2 300 000
G.2	Nuclear Instrumentation	RIPC		1.9	0.62	581 000	626 000
		RIAL	Staff / Direct Costs	2.0	10.6	1 152 000	1 201 000
			Site Operating Costs	–	–	316 000	304 000
		RIHU		1.1	0.4	267 000	310 000
				5.0	11.62	2 316 000	2 441 000
G.3	Theoretical Physics	RITP		7.0	25.0	1 714 000	1 800 000
G.4	Utilization of Research Reactors and Particle Accelerators	RIPC		1.7	0.68	429 000	444 000
		RIAL	Staff / Direct Costs	0.4	–	50 000	52 000
			Site Operating Costs	–	–	–	–
				2.1	0.68	479 000	496 000
G.5	Chemistry	RIPC		2.6	1.1	700 000	768 000
		RIAL	Staff / Direct Costs	1.7	5.3	613 000	640 000
			Site Operating Costs	–	–	178 000	163 000
				4.3	6.4	1 491 000	1 571 000
Programme G – Physical and Chemical Sciences		RIPC		18.6	12.8	4 022 000	4 138 000
		RIAL	Staff / Direct Costs	4.1	15.9	1 815 000	1 893 000
			Site Operating Costs	–	–	494 000	467 000
		RITP		7.0	25.0	1 714 000	1 800 000
		RIHU		1.1	0.4	267 000	310 000
				30.8	54.1	8 312 000	8 608 000
Major Programme 2: Nuclear Applications							
		RIFA		16.0	8.0	5 262 000	5 599 000
		RIHU		16.0	11.0	4 625 000	4 822 000
		RIPC		25.4	17.1	6 165 000	6 390 000
		RIAL	Staff / Direct Costs	23.8	64.6	6 474 000	6 755 000
			Site Operating Costs	–	–	2 861 000	2 858 000
		RIML		0.9	2.8	392 000	404 000
		RITP		7.0	25.0	1 714 000	1 800 000
				89.1	128.5	27 493 000	28 628 000

Agency's Laboratory and Divisional Costs by Subprogramme

Table 58 (Contd.)

				1995 Staffing P	1995 Staffing GS	1995 Estimates at 1995 prices	1996 Estimates at 1996 prices
J.1	Safeguards Operations	SG		197.3	140.3	52 736 000	55 324 000
		RIAL	Staff / Direct Costs	6.2	23.4	2 167 000	2 403 000
			Site Operating Costs	–	–	1 130 000	1 034 000
						56 033 000	58 761 000

Note: In order to show the costs of the laboratory in a manner comparable to that used for other activities (where site related costs are not allocated to these activities) this table gives the total laboratory costs apportioned to each subprogramme broken down separately into staff / direct costs and site operating costs.

Monaco Laboratory and Divisional Costs by Subprogramme

Table 59

				1995 Staffing P	1995 Staffing GS	Revised 1995 Estimates	Revised 1996 Estimates
C.4	Radiological and Environmental Aspects of Waste Management	NENF RIML		3.4	2.0	736 000	786 000
		C.4.06	Staff / Direct Costs	4.1	7.7	1 040 000	1 067 000
			Site Operating Costs	–	–	–	–
		C.4.07	Staff / Direct Costs	4.0	6.5	1 022 000	1 062 000
			Site Operating Costs	–	–	–	–
				11.5	16.2	2 798 000	2 915 000
E.4	Nutritional and Health–related Environmental Studies	RIHU/ RIAL		2.2 1.9	2.2 5.8	1 369 000	1 460 000
		RIML E.4.03	Staff / Direct Costs	0.9	2.8	392 000	404 000
			Site Operating Costs			–	–
				5.0	10.8	1 761 000	1 864 000

Note: Site operating costs, i.e. provision, maintenance and servicing of laboratory premises, are paid by the Principality of Monaco as a contribution–in–kind.

Additional High Priority Activities for 1995 and 1996

Table 60

Project	Responsible Division	Description	1995 at 1995 prices	1996 at 1996 prices
A.4.01	RIPC	CRP on applications of fusion and plasma physics technologies (TCM)	116 000	120 000
Programme A		Nuclear Power	116 000	120 000
C.1.05	NENF	CRP on conditioning of low and intermediate level radioactive wastes	97 000	101 000
C.4	RIML	General furnishing, training centre and underground laboratory	521 000	–
Programme C		Radioactive Waste Management	618 000	101 000
Major Prog. 1		**– Nuclear Power and the Fuel Cycle**	734 000	221 000
D.1.05	RIFA	CRP on increasing the yield of root and tuber crops through soil, plant and fertilizer management	94 000	98 000
D.2.03	RIFA	CRP on improvement of potential and neglected food crops	94 000	98 000
D.3	RIFA	Development of feeding, reproductive management and disease control strategies for improving fish production from aquaculture (independent project)	314 000	327 000
D.4.04	RIFA	CRP on the SIT for use against mosquitoes that transmit malaria	105 000	109 000
D.5.01	RIFA	CRP on amelioration of environmental effects of pollution from agriculture and of the effects on agriculture of industrial pollutants	95 000	99 000
D.6	RIFA	Practical Application and Trade Development of Irradiated Food – (independent project)	397 000	413 000
Programme D		Food and Agriculture	1 099 000	1 144 000
E.1.05	RIHU	CRP on radionuclide based rapid drug sensitivity tests in malaria (1995)	44 000	39 000
E.1.06	RIHU	CRP on immunocintigraphic methods for the diagnosis and follow–up of ovarian cancer (1995)	78 000	76 000
E.4	RIHU	Harmonization of health–related environmental measurements using nuclear analytical techniques (independent project)	469 000	571 000
Programme E		Human Health	591 000	686 000
F.2.02	RIPC	CRP on isotope–aided studies on water losses through soils and related soil salinization in arid and semi–arid zones	79 000	93 000
F.2	RIPC	Environmental studies related to large continental water bodies (Caspian Sea) – (independent project)	148 000	345 000
Programme F		Industry and Earth Sciences	227 000	438 000
G.2.04	RIHU	CRP leading to the development of computer assisted learning (CAL) in quality control of nuclear medicine instruments (1996)	37 000	49 000
G.4.01	RIPC	Rapid irradiation transfer system at the ASTRA reactor (equipment)	52 000	54 000
G.5.06	RIPC	Radioimmunodiagnostic agents (independent project)	129 000	111 000
G.5.08	RIPC	Enhanced utility of AQCS – (independent project)	367 000	421 000
Programme G		Physical and Chemical Sciences	585 000	635 000
Maj. Prog 2		**Nuclear Applications**	2 502 000	2 903 000

Additional High Priority Activities for 1995 and 1996
Table 60 (Contd.)

Project	Responsible Division	Description	1995 at 1995 prices	1996 at 1996 prices
H.1.02	NENS	Specialized courses in radiation protection	73 000	61 000
H.2.04	NENS	Advisory services on radiation safety in mining of radioactive ores	142 000	148 000
H.3.03	NENS	CRP on the assessment of the radiological consequences of the iodine contamination due to Chernobyl	53 000	55 000
H.4.01	NENS	Advisory services on the implementation of the regulations for transport of radioactive material	53 000	109 000
H.5.02	NENS	Upgrading of communication facilities in the Emergency Response Unit	53 000	55 000
H.6.01	NENS	Technical services (missions) on the regulatory control of radiation sources	105 000	164 000
H.7.02	NENS	Upgrading of measuring equipment in the IAEA radiation protection laboratory	105 000	110 000
Programme H		Radiation Safety	584 000	702 000
I.1.01	NENS	Additional full committee meetings and working group meetings for INSAG in order to expidite the development of new publications	105 000	109 000
I.4.02	NENS	Increase of INSARR Services	53 000	109 000
I.5.01	NENS	Probabilistic Safety Assessments – CRP and consultants services to prepare technical reports	53 000	55 000
Programme I		Safety of Nuclear Installations	211 000	273 000
Major Prog. 3 – Nuclear Safety and Radiation Protection			795 000	975 000
J.1.01	SGOB	Additional equipment in support of verification activities (in particular generic review stations and underwater sealing hardware)	679 000	–
J.1.02	SGOP	ADEX and ADLG support	422 000	–
J.1.04	SGIT	Seminar on accounting data	258 000	–
J.1.05	SGDE	Additional laboratory equipment at SAL	216 000	–
		New inspection equipment and the replacement of obsolete items	1 132 000	–
		Additional laboratory space at SAL and analytical equipment for detection of potentially undeclared activities	2 264 000	–
J.1		Safeguards Operations	4 971 000	–

Additional High Priority Activities for 1995 and 1996
Table 60 (Contd.)

Project	Responsible Division	Description	1995 at 1995 prices	1996 at 1996 prices
J.2.01	SGDE	Development and evaluation equipment	252 000	–
J.2.06	SGIT	Updating LAN infrastructure and migration to new mainframe technology	926 000	–
J.2.07	SGCP	Development of a capability for in-house core physics calculations (temporary assistance and travel)	113 000	–
J.2.10	SGDE	Training programme for professionally qualified persons from developing countries	318 000	–
J.2.12	SGDE	Equipment and support costs for the environmental monitoring testing programme	1 055 000	–
J.2		Safeguards Support and Development	2 664 000	–
J.3.03	SGSPR	Emerging requirements within the Department	264 000	–
		and support for public information activities	106 000	–
J.3		Safeguards Management	370 000	–
Major Prog. 4 – Safeguards			8 005 000	–
S.1.1	DGO	One P.5 post for the special unit for programme planning	115 000	120 000
S.1.2	SEC	One G.5 post for additional work load	42 000	44 000
S.1	Gen. Management and Sec. of the Policy-making Organs		157 000	164 000
S.2.2	ADLG	Expert advice on nuclear legislation and possible new tasks in the area of nuclear control (see also Safeguards programme J.1)	106 000	111 000
S.2.4	ADPR	Junior professional officer programme as requested in operative paragraph 3(e) of resolution GC(XXXVII)/Res/622	105 000	109 000
S.2	Administration		211 000	220 000
S.3.2	TCIM	Support costs for reorganization of division	95 000	99 000
S.3.4	TCSEV	Increased activities	42 000	44 000
S.3.5	TCSIS	One P.3 post for consultant programmer	78 000	81 000
		Updating software	42 000	44 000
		Updating hardware	32 000	33 000
S.3	TC Servicing and Coordination		289 000	301 000
S.4.1	ADGS	New telephone system	1 635 000	1 704 000
S.5.1	ADPI	New version of the film "For the Benefit of Humanity"	210 000	–
S	**Direction and Support**		2 502 000	2 389 000
Total Additional High Priority Activities for 1995/1996			14 538 000	6 488 000

ANNEX VI

Draft resolutions

A. REGULAR BUDGET APPROPRIATIONS FOR 1995

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Regular Budget of the Agency for 1995 [1],

1. Appropriates on the basis of an exchange rate of AS 12.70 to $1.00, an amount of $211 557 000 for the Regular Budget expenses of the Agency in 1995 as follows:

		United States dollars
1	Technical Assistance and Co-operation	11 795 000
2	Nuclear Energy and Safety [2]	31 533 000
3	Research and Isotopes [3]	30 101 000
4	Safeguards	72 745 000
5	Policy-making Organs	7 360 000
6	Executive Management, Administration and General Services	44 975 000
7	Unallocated Services [4]	7 008 000
	Sub-Total Agency Programme	205 517 000
8	Reimbursable Work for Others	6 040 000
	TOTAL	211 557 000

the amounts in the Appropriation Sections to be adjusted in accordance with the adjustment formula presented in the Attachment in order to take into account the exchange rate variations during the year.

2. Decides that the foregoing appropriation shall be financed, after the deduction of
   - revenues deriving from Reimbursable Work for Others (Section 8); and
   - other miscellaneous income of $2 814 000 (representing $1 780 000 plus AS13 132 000);

from contributions by Member States amounting, for an exchange rate of AS 12.70 to $1.00, to $202 703 000 ($32 282 000 plus the equivalent in US dollars of AS 2 164 347 000), in accordance with the scale of assessment fixed by the General Conference in resolution GC(XXXVIII)/RES/ , each contribution to be adjusted in the light of the rate applicable at the date of receipt; and

3. Authorizes the Director General:

   (a) To incur expenditures additional to those for which provision is made in the Regular Budget for 1995, provided that the relevant emoluments of any staff involved and all other costs are entirely financed from revenues arising out of sales, work performed for Member States or international organizations, research grants, special contributions or other sources extraneous to the Regular Budget for 1995; and

   (b) With the prior approval of the Board of Governors, to make transfers between any of the Sections listed in paragraph 1 above.

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[1] See document GC(XXXVIII)/ .

[2] For the financing of Nuclear Power, Nuclear Fuel Cycle and Waste Management, Nuclear Safety and Scientific and Technical Information.

[3] For the financing of Food and Agriculture, Life Sciences, Physical and Chemical Sciences, the International Centre for Theoretical Physics (in part) and the IAEA Marine Environment Laboratory - Monaco (in part).

[4] For the financing of Unallocated Publishing Services and Unallocated Data Processing Central Services.

ATTACHMENT

ADJUSTMENT FORMULA IN US $

1.	Technical Assistance and Co-operation	1 301 000	+	(133 274 000	/R)
2.	Nuclear Energy and Safety [2]	5 879 000	+	(325 806 000	/R)
3.	Research and Isotopes [3]	8 072 000	+	(279 768 000	/R)
4.	Safeguards	13 175 000	+	(756 539 000	/R)
5.	Policy-making Organs	1 019 000	+	(80 531 000	/R)
6.	Executive Management, Administration and General Services	3 977 000	+	(520 675 000	/R)
7.	Unallocated Services [4]	639 000	+	(80 886 000	/R)
	Sub-Total Agency Programme	34 062 000	+	(2 177 479 000	/R)
8.	Reimbursable Work for Others	718 000	+	(67 589 000	/R)
	TOTAL	34 780 000	+	(2 245 068 000	/R)

Note: R is the average United Nations schilling-to-dollar exchange rate which will be experienced during 1995.

[2-4] See footnotes on preceding page.

B. TECHNICAL ASSISTANCE AND CO-OPERATION FUND ALLOCATION FOR 1995

The General Conference,

Accepting the recommendation of the Board of Governors relating to the target for voluntary contributions to the Agency's Technical Assistance and Co-operation Fund for 1995 [1];

1. Decides that for 1995 the target for voluntary contributions to the Technical Assistance and Co-operation Fund shall be $61 500 000;

2. Notes that funds from other sources, estimated at $1 000 000, are expected to be available for that programme;

3. Allocates the amount of $62 500 000 for the Agency's Technical Assistance and Co-operation programme for 1995; and

4. Urges all Member States to make voluntary contributions for 1995 in accordance with Article XIV.F of the Statute, with paragraph 2 of its Resolution GC(V)/RES/100 as amended by Resolution GC(XV)/RES/286 or with paragraph 3 of the former Resolution, as appropriate.

C. THE WORKING CAPITAL FUND IN 1995

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Agency's Working Capital Fund in 1995 [2];

1. Approves a level of $16 000 000 for the Agency's Working Capital Fund in 1995;

2. Decides that the Fund shall be financed, administered and used in 1995 in accordance with the relevant provisions of the Agency's Financial Regulations [3];

3. Authorizes the Director General to make advances from the Fund not exceeding $500 000 at any time to finance temporarily projects or activities which have been approved by the Board of Governors for which no funds have been provided under the Regular Budget.

4. Requests the Director General to submit to the Board statements of advances made from the Fund under the authority given in paragraph 3 above.

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[1] See document GC(XXXVIII)/ ,para of the Introduction.
[2] See document GC(XXXVIII)/ ,para of the Introduction.
[3] INFCIRC/8/Rev.1 and Mod.1.

CORRESPONDENCE BETWEEN APPROPRIATION / DIVISIONAL STRUCTURE AND PROGRAMME STRUCTURE

Appropriation Sections / Divisions Broken Down by Programme and Subprogramme

Table 61

Appropriation Section	Programme / Subprogramme
1. TECHNICAL ASSISTANCE AND CO-OPERATION	
Technical Co-operation Programmes	S.3.1
Technical Co-operation Implementation	S.3.2
Technical Co-operation Programme Co-ordination	S.3.3
Technical Co-operation Evaluation	S.3.4
Technical Co-operation Information Systems Unit	S.3.5
2. NUCLEAR ENERGY AND SAFETY	
Nuclear Power	A (less part of A.4), part of X
Nuclear Fuel Cycle and Waste Management	B, C (less part of C.4), part of X
Nuclear Safety	H, I, part of X
Scientific and Technical Information	S.5.2, S.6.5 (Agency's Share)
3. RESEARCH AND ISOTOPES	
Food and Agriculture	D
Human Health	E (less part of E.4), part of G.2
Physical and Chemical Sciences	F, G (less G.3 and part of G.2), part of A.4
Agency Laboratory	Allocated
International Centre for Theoretical Physics	G.3
IAEA Marine Environment Laboratory - Monaco	Part of C.4, part of E.4
4. SAFEGUARDS	
Programme Co-ordination	Part of S.1.1 or [J.3.01]
Operations A, Operations B, Operations C	Part of J.1, part of J.2
Development and Technical Support	Part of J.1, part of J.2
Information Treatment	Part of J.1, part of J.2
Concepts and Planning	Part of J.2
Effectiveness Evaluation	J.3.02
Programme and Resources	J.3.03
5. POLICY-MAKING ORGANS	S.1.2
6. EXECUTIVE MANAGEMENT, ADMINISTRATION AND GENERAL SERVICES	
Executive Management	S.1.1 (less Safeguards Programme Co-ord.)
Administration	S.2, S.5.1
Internal Audit and Evaluation Support	S.1.3
General Services	S.4
7. SUPPORT SERVICES - UNALLOCATED SERVICES	
[Contracts Administration Services]	S.6.1
[Translation and Records Services]	S.6.3
[Medical Services]	S.6.4
[Library Services]	S.6.5
DP Central Services	S.6.6
[DP Application Services	S.6.7
[Printing Services]	S.6.8
Publishing Services	S.6.9
[Radiation Protection Services]	S.6.10

Estimates by Appropriation Section/Division Broken Down by Subprogramme

Table 62

APPROPRIATION SECTION 1: TECHNICAL ASSISTANCE AND CO-OPERATION
(showing subprogrammes which make up the appropriation section)

Sub-Programme Codes		1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.3.1	Technical Co-operation Programmes	3 978 000	49 000	1.2	4 027 000	75 000	1.9	4 102 000	5.8	4 260 000	4.3	4 526 000
S.3.2	Technical Co-operation Implementation	4 715 000	97 000	2.1	4 812 000	–	–	4 812 000	5.3	5 066 000	4.3	5 286 000
S.3.3	Technical Co-operation Programme Co-ordination	945 000	49 000	5.2	994 000	–	–	994 000	5.2	1 046 000	4.1	1 089 000
S.3.4	Technical Co-operation Evaluation	695 000	(3 000)	(0.4)	692 000	–	–	692 000	5.6	731 000	4.0	760 000
S.3.5	Technical Co-operation Information Systems Unit	661 000	(1 000)	(0.2)	660 000	–	–	660 000	4.8	692 000	3.9	719 000
Total: Appropriation 1												
Technical Assistance and Co-operation		10 994 000	191 000	1.7	11 185 000	75 000	0.7	11 260 000	5.5	11 795 000	4.3	12 380 000

APPROPRIATION SECTION 2: NUCLEAR ENERGY AND SAFETY
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes			1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
A.1	Nuclear Power Planning and Implementation		973 000	258 000	26.5	1 231 000	(29 000)	(2.4)	1 202 000	5.6	1 300 000	4.2	1 324 000
A.2	Assessment and Improvement of Nuclear Power Plant Performance		1 598 000	(169 000)	(10.6)	1 429 000	69 000	4.8	1 498 000	5.3	1 505 000	4.1	1 640 000
A.3	Advanced Reactor Developments and Applications		1 507 000	(3 000)	(0.2)	1 504 000	–	–	1 504 000	5.1	1 581 000	4.0	1 644 000
A.4	Nuclear Fusion	PART	79 000	(4 000)	(5.1)	75 000	–	–	75 000	5.3	79 000	3.8	82 000
X	Comparative Assessment of Nuclear Power and Other Energy Sources	PART	1 478 000	(105 000)	(7.1)	1 373 000	–	–	1 373 000	5.2	1 445 000	3.9	1 501 000
Division of Nuclear Power			5 635 000	(23 000)	(0.4)	5 612 000	40 000	0.7	5 652 000	5.3	5 910 000	4.0	6 191 000
B.1	Raw Materials for Reactor Fuels		506 000	(48 000)	(9.5)	458 000	28 000	6.1	486 000	5.5	483 000	3.9	532 000
B.2	Reactor Fuel Technology and Performance		686 000	(46 000)	(6.7)	640 000	8 000	1.3	648 000	4.8	671 000	3.8	706 000
B.3	Spent Fuel Management, Technology and Safety		1 021 000	23 000	2.3	1 044 000	(85 000)	(8.1)	959 000	5.3	1 099 000	4.0	1 050 000
B.4	Information on Nuclear Fuel Cycle		173 000	153 000	88.4	326 000	(2 000)	(0.6)	324 000	4.9	342 000	3.8	353 000
C.1	Handling, Treatment, Conditioning and Storage of Radioactive Wastes		656 000	152 000	23.2	808 000	(70 000)	(8.7)	738 000	5.0	848 000	4.0	805 000
C.2	Radioactive Waste Disposal		555 000	(39 000)	(7.0)	516 000	26 000	5.0	542 000	5.6	545 000	3.8	595 000
C.3	Decontamination and Decommissioning of Nuclear Installations		365 000	101 000	27.7	466 000	55 000	11.8	521 000	4.9	489 000	3.8	568 000
C.4	Radiological and Environmental Aspects of Waste Management	PART	821 000	(123 000)	(15.0)	698 000	17 000	2.4	715 000	5.4	736 000	4.2	786 000
C.5	Waste Management Planning and Infrastructure		1 225 000	191 000	15.6	1 416 000	65 000	4.6	1 481 000	5.4	1 493 000	4.0	1 623 000
X	Comparative Assessment of Nuclear Power and Other Energy Sources	PART	176 000	(1 000)	(0.6)	175 000	8 000	4.6	183 000	5.7	185 000	3.1	199 000
Division of Nuclear Fuel Cycle and Waste Management			6 184 000	363 000	5.9	6 547 000	50 000	0.8	6 597 000	5.3	6 891 000	3.9	7 217 000

APPROPRIATION SECTION 2 (Contd.)

Sub – Programme Codes			1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
H.1	Strengthening of Radiation Safety		711 000	36 000	5.1	747 000	(25 000)	(3.3)	722 000	5.5	788 000	4.2	794 000
H.2	Occupational Radiation Protection		805 000	(56 000)	(7.0)	749 000	(12 000)	(1.6)	737 000	5.5	790 000	4.0	807 000
H.3	Radiation Protection of the Public and the Environment		719 000	(101 000)	(14.0)	618 000	(26 000)	(4.2)	592 000	5.7	653 000	3.8	649 000
H.4	Safe Transport of Radioactive Material		550 000	(57 000)	(10.4)	493 000	58 000	11.8	551 000	5.3	519 000	4.1	603 000
H.5	Emergency Preparedness		478 000	26 000	5.4	504 000	(17 000)	(3.4)	487 000	5.0	529 000	4.5	535 000
H.6	Safety of Radiation Sources		528 000	50 000	9.5	578 000	5 000	0.9	583 000	5.4	609 000	3.9	639 000
H.7	Radiation Safety Services		429 000	55 000	12.8	484 000	(6 000)	(1.2)	478 000	5.8	512 000	4.5	529 000
I.1	Strengthening Basic Nuclear Safety		1 040 000	44 000	4.2	1 084 000	(8 000)	(0.7)	1 076 000	5.4	1 143 000	4.1	1 182 000
I.2	Engineering Safety Issues of Nuclear Power Plants		890 000	161 000	18.1	1 051 000	(74 000)	(7.0)	977 000	5.0	1 104 000	4.0	1 068 000
I.3	Operational Safety of Nuclear Power Plants		2 138 000	31 000	1.4	2 169 000	(43 000)	(2.0)	2 126 000	5.6	2 290 000	4.1	2 339 000
I.4	Research Reactor Safety		700 000	3 000	0.4	703 000	43 000	6.1	746 000	5.4	741 000	3.9	816 000
I.5	Nuclear Safety Assessment Practices		777 000	(146 000)	(18.8)	631 000	53 000	8.4	684 000	5.7	667 000	3.9	749 000
I.6	Safety Approaches to Future Nuclear Power Plants		168 000	(2 000)	(1.2)	166 000	22 000	13.3	188 000	5.4	175 000	4.5	207 000
I.7	Safety Reassessment of Nuclear Power Plants		337 000	(97 000)	(28.8)	240 000	58 000	24.2	298 000	5.4	253 000	3.8	326 000
I.8	Safety Appraisals of Facilities Established Under Project Agreements with the Agency		209 000	(88 000)	(42.1)	121 000	17 000	14.0	138 000	4.1	126 000	4.9	151 000
I.9	Communication with the Public		155 000	29 000	18.7	184 000	–	–	184 000	5.4	194 000	4.6	203 000
X	Comparative Assessment of Nuclear Power and Other Energy Sources	PART	279 000	88 000	31.5	367 000	17 000	4.6	384 000	5.2	386 000	3.5	418 000
Division of Nuclear Safety			10 913 000	(24 000)	(0.2)	10 889 000	62 000	0.6	10 951 000	5.4	11 479 000	4.1	12 015 000

APPROPRIATION SECTION 2 (Contd.)

Sub – Programme Codes		1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.5.2	International Nuclear Information System	4 951 000	(396 000)	(8.0)	4 555 000	(140 000)	(3.1)	4 415 000	5.1	4 788 000	4.2	4 839 000
	NESI – Office of the Director	277 000	(1 000)	(0.4)	276 000	–	–	276 000	5.4	291 000	4.1	303 000
S.6.5	Library Services	2 050 000	–	–	2 050 000	–	–	2 050 000	6.0	2 174 000	5.4	2 292 000
Division of Scientific and Technical Information		7 278 000	(397 000)	(5.5)	6 881 000	(140 000)	(2.0)	6 741 000	5.4	7 253 000	4.6	7 434 000
Total: Appropriation 2												
Nuclear Energy and Safety		30 010 000	(81 000)	(0.3)	29 929 000	12 000	–	29 941 000	5.4	31 533 000	4.2	32 857 000

APPROPRIATION SECTION 3: RESEARCH AND ISOTOPES
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes			1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
D.1	Soil Fertility, Irrigation and Crop Production		2 447 000	(35 000)	(1.4)	2 412 000	60 000	2.5	2 472 000	4.9	2 531 000	4.1	2 698 000
D.2	Plant Breeding and Genetics		1 616 000	(15 000)	(0.9)	1 601 000	(35 000)	(2.2)	1 566 000	4.7	1 677 000	4.0	1 707 000
D.3	Animal Production and Health		1 238 000	206 000	16.6	1 444 000	–	–	1 444 000	4.8	1 513 000	4.0	1 574 000
D.4	Insect and Pest Control		2 082 000	114 000	5.5	2 196 000	–	–	2 196 000	4.7	2 299 000	4.1	2 394 000
D.5	Agrochemicals and Residues		1 319 000	(160 000)	(12.1)	1 159 000	36 000	3.1	1 195 000	5.0	1 217 000	4.1	1 305 000
D.6	Food Preservation		826 000	(3 000)	(0.4)	823 000	–	–	823 000	4.6	861 000	4.1	898 000
		Sub–total	9 528 000	107 000	1.1	9 635 000	61 000	0.6	9 696 000	4.8	10 098 000	4.1	10 576 000
		Less: RIAL	4 619 000	(6 000)	(0.1)	4 613 000	(58 000)	(1.3)	4 555 000	4.8	4 836 000	4.2	4 977 000
Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture			4 909 000	113 000	2.3	5 022 000	119 000	2.4	5 141 000	4.8	5 262 000	3.9	5 599 000
E.1	Nuclear Medicine		1 345 000	(90 000)	(6.7)	1 255 000	(29 000)	(2.3)	1 226 000	4.8	1 315 000	4.1	1 339 000
E.2	Applied Radiation Biology and Radiotherapy		755 000	198 000	26.2	953 000	(30 000)	(3.1)	923 000	4.9	1 000 000	3.9	1 006 000
E.3	Dosimetry		1 528 000	(2 000)	(0.1)	1 526 000	–	–	1 526 000	5.3	1 607 000	4.1	1 673 000
E.4	Nutritional and Health–related Environmental Studies	PART	1 308 000	(1 000)	(0.1)	1 307 000	30 000	2.3	1 337 000	4.7	1 369 000	4.3	1 460 000
G.2	Nuclear Instrumentation	PART	166 000	86 000	51.8	252 000	30 000	11.9	282 000	6.0	267 000	4.4	310 000
		Sub–total	5 102 000	191 000	3.7	5 293 000	1 000	–	5 294 000	5.0	5 558 000	4 1	5 788 000
		Less: RIAL	890 000	–	–	890 000	(5 000)	(0.6)	885 000	4.8	933 000	4.2	966 000
Division of Human Health			4 212 000	191 000	4.5	4 403 000	6 000	0.1	4 409 000	5.0	4 625 000	4.1	4 822 000

APPROPRIATION SECTION 3: RESEARCH AND ISOTOPES (Contd.)
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes			1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
F.1	Industrial Applications		680 000	200 000	29.4	880 000	24 000	2.7	904 000	5.0	924 000	3.9	985 000
F.2	Development of Water Resources		2 432 000	(73 000)	(3.0)	2 359 000	–	–	2 359 000	5.0	2 476 000	4.1	2 577 000
G.1	Nuclear and Atomic Data for Applications		2 447 000	(255 000)	(10.4)	2 192 000	(100 000)	(4.6)	2 092 000	5.5	2 312 000	4.3	2 300 000
G.2	Nuclear Instrumentation		2 051 000	(95 000)	(4.6)	1 956 000	–	–	1 956 000	4.8	2 049 000	4.1	2 131 000
G.4	Utilization of Research Reactors and Particle Accelerators		462 000	(3 000)	(0.6)	459 000	–	–	459 000	4.4	479 000	3.5	496 000
G.5	Chemistry		1 352 000	69 000	5.1	1 421 000	17 000	1.2	1 438 000	4.9	1 491 000	4.1	1 571 000
A.4	Nuclear Fusion	PART	524 000	(5 000)	(1.0)	519 000	–	–	519 000	5.2	546 000	3.9	566 000
		Sub–total	9 948 000	(162 000)	(1.6)	9 786 000	(59 000)	(0.6)	9 727 000	5.0	10 277 000	4.1	10 626 000
		Less: RIAL	3 401 000	–	–	3 401 000	(42 000)	(1.2)	3 359 000	4.9	3 566 000	4.2	3 670 000
Division of Physical and Chemical Sciences			6 547 000	(162 000)	(2.5)	6 385 000	(17 000)	(0.3)	6 368 000	5.1	6 711 000	4.0	6 956 000
G.3	Theoretical Physics International Centre for Theoretical Physics		1 648 000	–	–	1 648 000	–	–	1 648 000	4.0	1 714 000	5.0	1 800 000
C.4	Radiological and Environmental Aspects of Waste Management	PART	1 897 000	83 000	4.4	1 980 000	–	–	1 980 000	4.1	2 062 000	3.3	2 129 000
E.4	Nutritional and Health–related Environmental Studies	PART	467 000	(88 000)	(18.8)	379 000	–	–	379 000	3.4	392 000	3.1	404 000
IAEA Marine Environment Laboratory – Monaco			2 364 000	(5 000)	(0.2)	2 359 000	–	–	2 359 000	4.0	2 454 000	3.3	2 533 000
Total: Appropriation 3 Research and Isotopes			28 590 000	131 000	0.5	28 721 000	3 000	–	28 724 000	4.8	30 101 000	4.1	31 323 000

APPROPRIATION SECTION 4: SAFEGUARDS
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes			1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.1	Safeguards Operations	PART	14 988 000	1 003 000	6.7	15 991 000	97 000	0.6	16 088 000	8.4	17 331 000	4 3	18 177 000
J.2	Support and Development	PART	950 000	(120 000)	(12.6)	830 000	(97 000)	(11.7)	733 000	5.3	874 000	3.9	800 000
	Division of Operations A		15 938 000	883 000	5.5	16 821 000	–	–	16 821 000	8.2	18 205 000	4.2	18 977 000
J.1	Safeguards Operations	PART	12 317 000	(422 000)	(3.4)	11 895 000	161 000	1.4	12 056 000	5.2	12 516 000	4.1	13 203 000
J.2	Support and Development	PART	108 000	53 000	49.1	161 000	(161 000)	(100.0)	–	6.2	171 000	–	–
	Division of Operations B		12 425 000	(369 000)	(3.0)	12 056 000	–	–	12 056 000	5.2	12 687 000	4.1	13 203 000
J.1	Safeguards Operations	PART	11 582 000	124 000	1.1	11 706 000	97 000	0.8	11 803 000	5.5	12 355 000	4.3	12 989 000
J.2	Support and Development	PART	572 000	(106 000)	(18.5)	466 000	(97 000)	(20.8)	369 000	5.2	490 000	3.9	401 000
	Division of Operations C		12 154 000	18 000	0.1	12 172 000	–	–	12 172 000	5.5	12 845 000	4.2	13 390 000
	Safeguards Operations		40 517 000	532 000	1.3	41 049 000	–	–	41 049 000	6.5	43 737 000	4.2	45 570 000
J.1	Safeguards Operations	PART	8 402 000	48 000	0.6	8 450 000	(50 000)	(0.6)	8 400 000	4.5	8 829 000	4.0	9 129 000
J.2	Support and Development	PART	3 574 000	(48 000)	(1.3)	3 526 000	–	–	3 526 000	5.4	3 718 000	4.2	3 875 000
	Division of Development and Technical Support		11 976 000	–	–	11 976 000	(50 000)	(0.4)	11 926 000	4.8	12 547 000	4.1	13 004 000

APPROPRIATION SECTION 4: SAFEGUARDS (Contd.)
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes			1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
J.1	Safeguards Operations	PART	4 770 000	(6 000)	(0.1)	4 764 000	46 000	1.0	4 810 000	5.0	5 002 000	4.2	5 263 000
J.2	Support and Development	PART	4 155 000	(248 000)	(6.0)	3 907 000	(46 000)	(1.2)	3 861 000	5.5	4 123 000	4.2	4 246 000
	Division of Safeguards Information Treatment		8 925 000	(254 000)	(2.8)	8 671 000	–	–	8 671 000	5.2	9 125 000	4.2	9 509 000
J.2	Support and Development	PART	4 724 000	(284 000)	(6.0)	4 440 000	50 000	1.1	4 490 000	6.5	4 728 000	4.3	4 983 000
	Division of Concepts and Planning		4 724 000	(284 000)	(6.0)	4 440 000	50 000	1.1	4 490 000	6.5	4 728 000	4.3	4 983 000
	Planning, Direction, Co–ordination and Control (DDG_SG)	PART	308 000	–	–	308 000	–	–	308 000	4.9	323 000	4.6	338 000
J.2	Support and Development (SGSEE)	PART	51 000	(51 000)	(100.0)	–	–	–	–	–	–	–	–
J.3	Safeguards Management (SGSEE)		892 000	50 000	5.6	942 000	–	–	942 000	5.9	998 000	4.2	1 040 000
	(SGSPR)		1 209 000	7 000	0.6	1 216 000	–	–	1 216 000	5.8	1 287 000	4.3	1 342 000
Total:	**Appropriation 4 Safeguards**		68 602 000	–	–	68 602 000	–	–	68 602 000	6.0	72 745 000	4.2	75 786 000

APPROPRIATION SECTION 5: POLICY-MAKING ORGANS
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes	1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.1.2.A General Conference	2 892 000	(9 000)	(0.3)	2 883 000	–	–	2 883 000	4.8	3 021 000	3.9	3 140 000
S.1.2.B Board of Governors	4 106 000	8 000	0.2	4 114 000	–	–	4 114 000	5.5	4 339 000	4.3	4 524 000
Total: Appropriation 5											
Policy-making Organs	6 998 000	(1 000)	–	6 997 000	–	–	6 997 000	5.2	7 360 000	4.1	7 664 000

APPROPRIATION SECTION 6: EXECUTIVE MANAGEMENT, ADMINISTRATION AND GENERAL SERVICES
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes		1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.1.1	Executive Management	3 204 000	(24 000)	(0.7)	3 180 000	–	–	3 180 000	5.8	3 365 000	4.2	3 506 000
	Administration:											
S.2.1	External Relations	1 875 000	(10 000)	(0.5)	1 865 000	–	–	1 865 000	5.6	1 969 000	4.2	2 052 000
S.2.2	Legal Services	1 442 000	(4 000)	(0.3)	1 438 000	–	–	1 438 000	5.9	1 523 000	4.5	1 591 000
S.2.3	Management Services	380 000	–	–	380 000	–	–	380 000	5.3	400 000	4.0	416 000
S.2.4	Personnel Services	4 171 000	(6 000)	(0.1)	4 165 000	–	–	4 165 000	5.1	4 378 000	4.2	4 563 000
S.2.5	Budget and Finance	6 063 000	(3 000)	–	6 060 000	–	–	6 060 000	5.2	6 378 000	4.4	6 657 000
S.2.6	Staff Council	184 000	–	–	184 000	–	–	184 000	6.0	195 000	4.6	204 000
S.2.7	Conference Services	800 000	–	–	800 000	–	–	800 000	5.0	840 000	4.5	878 000
S.5.1	Public Information	2 730 000	(8 000)	(0.3)	2 722 000	–	–	2 722 000	5.0	2 858 000	4.3	2 981 000
S.1.3	Internal Audit and Evaluation Supp	838 000	(1 000)	(0.1)	837 000	–	–	837 000	5.7	885 000	4.4	924 000
S.4	General Services	21 433 000	(152 000)	(0.7)	21 281 000	–	–	21 281 000	4.2	22 184 000	4.2	23 105 000
Total: Appropriation 6 Executive Management, Administration and General Services		43 120 000	(208 000)	(0.5)	42 912 000	–	–	42 912 000	4.8	44 975 000	4.2	46 877 000

APPROPRIATION SECTION 7: UNALLOCATED SERVICES
(showing subprogrammes which make up the appropriation section)

Sub – Programme Codes		1994 Budget (Adjusted)	Expenditure increase / (decrease)	%	1995 at 1994 prices	Expenditure increase / (decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
S.6.6	DP Central Services	3 903 000	(2 000)	(0.1)	3 901 000	–	–	3 901 000	4.9	4 092 000	4.1	4 259 000
S.6.9	Publishing Services	2 801 000	(30 000)	(1.1)	2 771 000	(90 000)	(3.2)	2 681 000	5.2	2 916 000	4.3	2 944 000
Total: Appropriation 7												
Unallocated Services		6 704 000	(32 000)	(0.5)	6 672 000	(90 000)	(1.3)	6 582 000	5.0	7 008 000	4.2	7 203 000

THE REGULAR BUDGET

By Appropriation Section

Table 63

	1993 Actual expenditures	1994 Budget (Adjusted)	Expenditure increase(decrease)	%	1995 at 1994 prices	Expenditure increase(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
1. Tech. Assistance and Co-operation	10 292 537	10 994 000	191 000	1.7	11 185 000	75 000	0.7	11 260 000	5.5	11 795 000	4.3	12 380 000
2. Nuclear Power	5 217 899	5 635 000	(23 000)	(0.4)	5 612 000	40 000	0.7	5 652 000	5.3	5 910 000	4.0	6 191 000
Nuclear Fuel Cycle and Waste Management	5 555 175	6 184 000	363 000	5.9	6 547 000	50 000	0.8	6 597 000	5.3	6 891 000	3.9	7 217 000
Nuclear Safety	10 008 659	10 913 000	(24 000)	(0.2)	10 889 000	62 000	0.6	10 951 000	5.4	11 479 000	4.1	12 015 000
Scientific and Technical Information	6 660 616	7 278 000	(397 000)	(5.5)	6 881 000	(140 000)	(2.0)	6 741 000	5.4	7 253 000	4.6	7 434 000
Nuclear Energy and Safety	27 442 349	30 010 000	(81 000)	(0.3)	29 929 000	12 000	-	29 941 000	5.4	31 533 000	4.2	32 857 000
3. Food and Agriculture	4 367 582	4 909 000	113 000	2.3	5 022 000	119 000	2.4	5 141 000	4.8	5 262 000	3.9	5 599 000
Human Health	3 718 661	4 212 000	191 000	4.5	4 403 000	6 000	0.1	4 409 000	5.0	4 625 000	4.1	4 822 000
Physical and Chemical Sciences	5 812 375	6 547 000	(162 000)	(2.5)	6 385 000	(17 000)	(0.3)	6 368 000	5.1	6 711 000	4.0	6 956 000
Laboratory Services	8 627 541	8 910 000	(6 000)	(0.1)	8 904 000	(105 000)	(1.2)	8 799 000	4.8	9 335 000	4.2	9 613 000
International Centre for Theoretical Physics	1 385 828	1 648 000	-	-	1 648 000	-	-	1 648 000	4.0	1 714 000	5.0	1 800 000
IAEA Marine Environment Laboratory, Monaco	2 294 444	2 364 000	(5 000)	(0.2)	2 359 000	-	-	2 359 000	4.0	2 454 000	3.3	2 533 000
Research and Isotopes (including Operational Facilities)	26 206 431	28 590 000	131 000	0.5	28 721 000	3 000	-	28 724 000	4.8	30 101 000	4.1	31 323 000
4. Safeguards	63 715 708	68 602 000	-	-	68 602 000	-	-	68 602 000	6.0	72 745 000	4.2	75 786 000
5. Policy-making Organs	6 470 830	6 998 000	(1 000)	-	6 997 000	-	-	6 997 000	5.2	7 360 000	4.1	7 664 000
6. Executive Management	2 617 275	3 204 000	(24 000)	(0.7)	3 180 000	-	-	3 180 000	5.8	3 365 000	4.2	3 506 000
Administration	15 541 079	17 645 000	(31 000)	(0.2)	17 614 000	-	-	17 614 000	5.3	18 541 000	4.3	19 342 000
Internal Audit and Evaluation Support	714 197	838 000	(1 000)	-	837 000	-	-	837 000	5.7	885 000	4.4	924 000
General Services	18 586 993	21 433 000	(152 000)	(0.7)	21 281 000	-	-	21 281 000	4.2	22 184 000	4.2	23 105 000
Executive Managem., Administration and General Services	37 459 544	43 120 000	(208 000)	(0.5)	42 912 000	-	-	42 912 000	4.8	44 975 000	4.2	46 877 000
7. Data Processing Central Services	3 723 448	3 903 000	(2 000)	(0.1)	3 901 000	-	-	3 901 000	4.9	4 092 000	4.1	4 259 000
Publishing Services	2 299 352	2 801 000	(30 000)	(1.1)	2 771 000	(90 000)	(3.2)	2 681 000	5.2	2 916 000	4.3	2 944 000
Unallocated Services	6 022 800	6 704 000	(32 000)	(0.5)	6 672 000	(90 000)	(1.3)	6 582 000	5.0	7 008 000	4.2	7 203 000
Regular Budget for Agency Programmes	177 610 199	195 018 000	-	-	195 018 000	-	-	195 018 000	5.4	205 517 000	4.2	214 090 000
8 Reimbursable Work for Others	4 784 233	5 085 000	679 000	13.4	5 764 000	-	-	5 764 000	4.8	6 040 000	4.3	6 298 000
Total Regular Budget	182 394 432	200 103 000	679 000	0.3	200 782 000	-	-	200 782 000	5.4	211 557 000	4.2	220 388 000

THE REGULAR BUDGET

By Department

Table 64

	1993 Actual expenditures	1994 Budget (Adjusted)	Expenditure increase(decrease)	%	1995 at 1994 prices	Expenditure increase(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
1. Director General, Secretariat of the Policy-making Organs and Office of Internal Audit and Evaluation Support	8 177 506	9 141 000	(12 000)	(0.1)	9 129 000	-	-	9 129 000	5.3	9 616 000	4.2	10 016 000
2. Department of Tech. Co-operation	10 687 813	11 414 000	188 000	1.6	11 602 000	75 000	0.6	11 677 000	5.5	12 236 000	4.3	12 840 000
3. Department of Nuclear Energy and Safety	27 884 592	30 526 000	(86 000)	(0.3)	30 440 000	12 000	-	30 452 000	5.4	32 073 000	4.2	33 420 000
Unallocated Data Processing Central Service	3 723 448	3 903 000	(2 000)	(0.1)	3 901 000	-	-	3 901 000	4.9	4 092 000	4.1	4 259 000
4. Department of Research and Isotopes	26 606 298	29 041 000	129 000	0.4	29 170 000	3 000	-	29 173 000	4.8	30 576 000	4.1	31 818 000
5. Department of Safeguards	63 715 708	68 602 000	-	-	68 602 000	-	-	68 602 000	6.0	72 745 000	4.2	75 786 000
6. Department of Administration	34 515 482	39 590 000	(187 000)	(0.5)	39 403 000	-	-	39 403 000	4.7	41 263 000	4.2	43 007 000
Unallocated Publishing Services	2 299 352	2 801 000	(30 000)	(1.1)	2 771 000	(90 000)	(3.2)	2 681 000	5.2	2 916 000	4.3	2 944 000
Regular Budget for Agency Programmes	177 610 199	195 018 000	-	-	195 018 000	-	-	195 018 000	5.4	205 517 000	4.2	214 090 000
Reimbursable Work for Others	4 784 233	5 085 000	679 000	13.4	5 764 000	-	-	5 764 000	4.8	6 040 000	4.3	6 298 000
Total Regular Budget	182 394 432	200 103 000	679 000	0.3	200 782 000	-	-	200 782 000	5.4	211 557 000	4.2	220 388 000

THE REGULAR BUDGET

By Item of expenditure

Table 65

Item of Expenditure	1993 Actual expenditures	1994 Budget (Adjusted)	Expenditure increase(decrease)	%	1995 at 1994 prices	Expenditure increase(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
Salaries - established posts - P	39 825 180	45 154 000	(296 000)	(0.7)	44 858 000	(24 000)	(0.1)	44 834 000	7.3	48 146 000	4.3	50 182 000
Temporary assistance - P	2 640 355	1 786 100	371 900	20.8	2 158 000	116 000	5.4	2 274 000	6.8	2 304 800	4.0	2 525 300
Salaries - established posts - GS	27 910 236	30 133 000	193 000	0.6	30 326 000	(32 000)	(0.1)	30 294 000	4.8	31 791 000	4.5	33 173 000
Temporary assistance - GS	1 911 153	1 703 000	125 300	7.4	1 828 300	34 000	1.9	1 862 300	3.5	1 892 700	3.5	1 995 600
Common staff costs	27 567 123	30 570 300	73 500	0.2	30 643 800	35 800	0.1	30 679 600	6.3	32 583 500	4.3	34 040 800
Overtime	265 964	264 000	(2 400)	(0.9)	261 600	(1 300)	(0.5)	260 300	3.5	270 700	3.5	278 700
Sub-total: Staff costs	100 120 011	109 610 400	465 300	0.4	110 075 700	128 500	0.1	110 204 200	6.3	116 988 700	4.3	122 195 400
Travel - staff	8 724 960	10 380 600	443 400	4.3	10 824 000	(3 000)	-	10 821 000	4.9	11 351 500	4.9	11 903 100
Travel - non-staff	5 876 465	6 967 300	345 300	5.0	7 312 600	323 000	4.4	7 635 600	3.3	7 555 700	3.3	8 150 500
Sub-total: Travel costs	14 601 425	17 347 900	788 700	4.5	18 136 600	320 000	1.8	18 456 600	4.2	18 907 200	4.2	20 053 600
Interpretation Services	659 010	834 000	(181 000)	(21.7)	653 000	(48 000)	(7.4)	605 000	5.7	690 000	5.8	677 000
Representation and hospitality	153 397	171 700	(3 300)	(1.9)	168 400	-	-	168 400	2.2	172 100	-	172 100
Training	232 443	423 000	(5 100)	(1.2)	417 900	(11 000)	(2.6)	406 900	6.0	443 100	3.8	447 600
Equipment: leased or rented	105 765	236 100	(105 100)	(44.5)	131 000	1 900	1.5	132 900	4.0	136 300	4.0	143 800
Equipment purchased/ construction work	12 337 150	10 331 800	(1 900)	-	10 329 900	(287 900)	(2.8)	10 042 000	3.2	10 661 400	3.2	10 688 700
Supplies and materials	3 734 878	4 265 100	(181 500)	(4.3)	4 083 600	108 400	2.7	4 192 000	4.1	4 249 200	4.1	4 542 200
General operating expenses	14 054 241	16 843 900	(76 000)	(0.5)	16 767 900	50 300	0.3	16 818 200	3.6	17 377 400	3.6	18 062 500
Contracts	2 266 853	2 470 500	(655 400)	(26.5)	1 815 100	(63 300)	(3.5)	1 751 800	3.4	1 877 000	3.3	1 868 000
Research and technical contracts	3 676 545	4 034 000	465 000	11.5	4 499 000	6 000	0.1	4 505 000	3.8	4 672 000	3.8	4 855 000
Miscellaneous	2 694 295	2 879 600	36 300	1.3	2 915 900	30 100	1.0	2 946 000	4.2	3 037 600	4.8	3 215 100
Sub-total: Other direct costs	39 914 577	42 489 700	(708 000)	(1.7)	41 781 700	(213 500)	(0.5)	41 568 200	3.7	43 316 100	3.7	44 672 000
Translation and Records Services	7 040 187	7 602 000	(333 000)	(4.4)	7 269 000	10 000	0.1	7 279 000	5.5	7 670 000	4.1	7 995 000
Printing Services	3 623 289	4 078 000	(283 000)	(6.9)	3 795 000	(57 000)	(1.5)	3 738 000	4.5	3 967 000	4.4	4 079 000
Data Processing Application Services	885 265	921 000	120 000	13.0	1 041 000	(98 000)	(9.4)	943 000	4.8	1 091 000	3.7	1 026 000
Contract Administration Services	466 641	543 000	-	-	543 000	-	-	543 000	4.8	569 000	4.0	592 000
Other Services a_/	4 936 004	5 722 000	(18 000)	(0.3)	5 704 000	-	-	5 704 000	5.2	6 000 000	4.6	6 274 000
Sub-total: Shared costs	16 951 386	18 866 000	(514 000)	(2.7)	18 352 000	(145 000)	(0.8)	18 207 000	5.1	19 297 000	4.3	19 966 000
Unallocated Services	6 022 800	6 704 000	(32 000)	(0.5)	6 672 000	(90 000)	(1.3)	6 582 000	5.0	7 008 000	4.2	7 203 000
Regular Budget for Agency Programmes	177 610 199	195 018 000	-	-	195 018 000	-	-	195 018 000	5.4	205 517 000	4.2	214 090 000
Reimbursable Work for Others	4 784 233	5 085 000	679 000	13.4	5 764 000	-	-	5 764 000	4.8	6 040 000	4.3	6 298 000
Total Regular Budget	182 394 432	200 103 000	679 000	0.3	200 782 000	-	-	200 782 000	5.4	211 557 000	4 2	220 388 000

a_/ Includes the Agency's share of Medical Services, Library Services, Radiation Protection Services and DP Central Services for Safeguards.

SUPPORT SERVICES

By Item of Expenditure

Table 66

Item of Expenditure	1993 Actual expenditures	1994 Budget (Adjusted)	Expenditure increase(decrease)	%	1995 at 1994 prices	Expenditure increase(decrease)	%	1996 at 1994 prices	Price increase %	1995 with price increase	Price increase %	1996 with price increase
Salaries - established posts - P	5 951 271	7 018 000	(275 000)	(3.9)	6 743 000	-	-	6 743 000	6.8	7 202 000	4.3	7 510 000
Temporary assistance - P	138 557	435 100	(99 100)	(22.8)	336 000	(36 000)	(10.7)	300 000	0.7	338 400	-	300 000
Salaries - established posts - GS	8 228 652	8 849 000	(87 000)	(1.0)	8 762 000	(38 000)	(0.4)	8 724 000	4.6	9 161 000	4.5	9 532 000
Temporary assistance - GS	271 194	430 800	204 800	47.5	635 600	(19 000)	(3.0)	616 600	3.5	658 100	3.6	661 300
Common staff costs	5 459 113	6 404 100	(141 700)	(2.2)	6 262 400	(36 700)	(0.6)	6 225 700	5.4	6 601 500	4.4	6 852 500
Overtime	123 031	129 200	2 400	1.9	131 600	-	-	131 600	3 6	136 300	3.5	141 100
Sub-total: Staff costs	20 171 818	23 266 200	(395 600)	(1.7)	22 870 600	(129 700)	(0.6)	22 740 900	5.4	24 097 300	4.3	24 996 900
Travel - staff	55 922	102 700	500	0.5	103 200	(2 200)	(2.1)	101 000	4.8	108 200	4.8	111 000
Travel - non staff	2 547	-	-	-	-	-	-	-	-	-	-	-
Sub-total: Travel costs	58 469	102 700	500	0.5	103 200	(2 200)	(2.1)	101 000	4.8	108 200	4.8	111 000
Representation and hospitality	142	1 000	-	-	1 000	-	-	1 000	-	1 000	-	1 000
Training	77 649	169 200	(14 300)	(8.5)	154 900	(4 500)	(2.9)	150 400	6.0	164 200	3.9	165 600
Equipment: leased or rented	880 953	925 800	571 600	61.7	1 497 400	-	-	1 497 400	3.8	1 553 600	3.6	1 610 300
Equipment purchased/ construction	975 270	548 100	(13 200)	(2.4)	534 900	(2 000)	(0.4)	532 900	2.9	550 200	2.8	562 400
Equipment replacement fund contribution	-	-	100 000	-	100 000	-	-	100 000	-	100 000	-	100 000
Supplies and materials	2 146 591	2 402 300	(115 000)	(4.8)	2 287 300	(45 700)	(2.0)	2 241 600	6.1	2 427 500	6.2	2 525 700
General operating expenses	1 379 290	2 094 200	94 600	4.5	2 188 800	(15 500)	(0.7)	2 173 300	2.8	2 250 800	2.8	2 298 600
Contracts	518 850	631 000	(26 500)	(4.2)	604 500	(20 400)	(3.4)	584 100	3.2	624 000	3.0	620 000
Miscellaneous	1 549 387	514 500	(69 100)	(13.4)	445 400	(15 000)	(3.4)	430 400	5.1	468 200	5.1	475 500
Sub-total: Other direct costs	7 528 132	7 286 100	528 100	7.2	7 814 200	(103 100)	(1.3)	7 711 100	4.2	8 139 500	4.1	8 359 100
Translation and Records Services	6 084	24 000	(18 000)	(75.0)	6 000	-	-	6 000	-	6 000	-	6 000
Printing Services	87 567	94 000	(8 000)	(8.5)	86 000	-	-	86 000	3.5	89 000	3.4	92 000
Data Processing Application Services	79 317	153 000	(27 000)	(17.6)	126 000	-	-	126 000	4.0	131 000	3.8	136 000
Data Processing Central Services for Library	160 018	177 000	-	-	177 000	-	-	177 000	5.1	186 000	3.8	193 000
Sub-total: Shared costs	332 986	448 000	(53 000)	(11.8)	395 000	-	-	395 000	4.3	412 000	3.6	427 000
Sub-total	28 091 405	31 103 000	80 000	0.3	31 183 000	(235 000)	(0.8)	30 948 000	5.0	32 757 000	4.3	33 894 000
Less: Cross-Charge (above)	332 986	448 000	(53 000)	(11.8)	395 000	-	-	395 000	4.3	412 000	3.6	427 000
Total Support Services	27 758 419	30 655 000	133 000	0.4	30 788 000	(235 000)	(0.8)	30 553 000	5.1	32 345 000	4.3	33 467 000
Less:												
Unallocated Services	6 022 800	6 704 000	(32 000)	(0.5)	6 672 000	(90 000)	(1.3)	6 582 000	5.0	7 008 000	4.2	7 203 000
Reimbursable Work for Others	4 784 233	5 085 000	679 000	13.4	5 764 000	-	-	5 764 000	4.8	6 040 000	4.3	6 298 000
Total charged to Agency Programmes a_/	16 951 386	18 866 000	(514 000)	(2.7)	18 352 000	(145 000)	(0.8)	18 207 000	5.1	19 297 000	4.3	19 966 000

a_/ These amounts are included in Table 65 under Sub-total Shared costs.

Staffing Table for 1995
Table 67

Organizational Unit	DG	DDG	D	P-5	P-4	P-3	P-2	P-1	Sub-Total	GS	Total
Office of the Director General	1	–	1	2	–	1	–	–	5	3	8
Secretariat of the Policy-making Organs	–	–	1	1	–	1	–	–	3	3	6
Internal Audit and Evaluation Support	–	–	–	2	2	–	1	–	5	5	10
Sub-total	1	–	2	5	2	2	1	–	13	11	24
Department of Technical Co-operation	–	1	–	–	–	1	–	–	2	2	4
Div. of Technical Co-op. Programmes	–	–	2	6	6	6	3	–	23	20	43
Div. of Technical Co-op. Implementation	–	–	1	4	4	8	1	–	18	45	63
Programme Co-ordination Section	–	–	–	1	–	1	3	–	5	7	12
Evaluation Section	–	–	–	1	1	2	–	–	4	3	7
Information Systems Unit	–	–	–	–	1	1	–	–	2	3	5
Sub-total	–	1	3	12	12	19	7	–	54	80	134
Department of Nuclear Energy and Safety	–	1	–	–	–	1	–	1	3	2	5
Div. of Nuclear Power	–	–	1	9	6	6	1	–	23	14	37
Div. of Nuclear Fuel Cycle and W. M.	–	–	1	10	14	1	–	–	26	14	40
Div. of Nuclear Safety a_/	–	–	1	23	15	2	–	–	41	27	68
Div. of Scientific and Technical Information b_/	–	–	1	2	6	6	2	1	18	29	47
Sub-total	–	1	4	44	41	16	3	2	111	86	197
Department of Research and Isotopes	–	1	–	–	–	1	–	–	2	2	4
Joint FAO/IAEA Division	–	–	–	5	7	2	2	–	16	8	24
Div. of Human Health	–	–	1	4	9	2	–	–	16	11	27
Div. of Physical and Chemical Sciences	–	–	1	6	12	5	3	–	27	18	45
The Agency's Laboratory	–	–	1	3	12	7	6	1	30	88	118
IAEA Marine Environment Laboratory – Monaco	–	–	1	2	1	1	4	–	9	17	26
International Centre for Theoretical Physics	–	–	1	4	–	–	2	–	7	25	32
Sub-total	–	1	5	24	41	18	17	1	107	169	276
Department of Safeguards	–	1	–	–	–	–	–	–	1	2	3
Div. of Operations A	–	–	1	14	26	34	–	–	75	33	108
Div. of Operations B	–	–	1	12	22	22	–	–	57	30	87
Div. of Operations C	–	–	1	12	25	27	–	–	65	32	97
Div. of Development and Tech. Support	–	–	1	9	15	2	–	–	27	43	70
Div. of Information Treatment	–	–	1	5	11	5	7	–	29	41	70
Div. of Concepts and Planning	–	–	1	9	17	2	1	–	30	18	48
Effectiveness Evaluation	–	–	–	1	5	–	–	–	6	5	11
Programme & Resources Section	–	–	–	3	1	1	1	–	6	7	13
Sub-total	–	1	6	65	122	93	9	–	296	211	507
Department of Administration	–	1	–	–	1	1	–	–	3	2	5
Div. of External Relations	–	–	2	4	3	1	–	–	10	12	22
Conference Services	–	–	–	–	1	–	1	–	2	7	9
Legal Division	–	–	1	5	–	2	–	–	8	5	13
Div. of Personnel c_/	–	–	1	2	3	3	3	–	12	27	39
Staff Association d_/	–	–	–	–	–	–	–	–	d_/	d_/	d_/
Office of Management Services	–	–	–	1	–	1	–	–	2	2	4
Div. of Budget and Finance	–	–	1	4	5	8	4	–	22	50	72
Div. of Public Information	–	–	1	1	1	1	1	–	5	10	15
Div. of General Services	–	–	1	2	3	1	2	1	10	104	114
Sub-total	–	1	7	19	17	18	11	1	74	219	293
Support Services											
Contract Administration Services	–	–	–	–	1	–	–	–	1	5	6
Translation and Records Services	–	–	1	6	14	27	–	–	48	49	97
Medical Services	–	–	1	1	1	–	–	–	3	17	20
Library Services	–	–	–	1	–	1	2	–	4	10	14
Data Processing Services	–	–	–	3	8	11	6	1	29	36	65
Printing Services	–	–	–	1	–	–	–	–	1	63	64
Publishing Services	–	–	–	1	–	10	1	–	12	32	44
Radiation Protection Services	–	–	–	1	–	2	–	–	3	7	10
Sub-total	–	–	2	14	24	51	9	1	101	219	320
Reserve of Posts	–	–	–	–	–	–	–	2	2	–	2
TOTAL	1	5	29	183	259	217	57	7	758	995	1 753

a_/ Excluding Radiation Protection Services, which is shown under Support Services.
b_/ Excluding Data Processing Services and Library, which are shown under Support Services.
c_/ Excluding Medical Services, which is shown under Support Services.
d_/ The post of the Staff Council President will remain in the Department from which its President is released.

ANNEX IX

Summary of staffing by grade of post and by Department
Table 68

Grade of post	Number of established posts					
				Change		
	1993 Adjusted	1994	1994 Adjusted	New posts	Reclassi-fications	1995
DG	1	1	1	–	–	1
DDG	5	5	5	–	–	5
D	29	29	29	–	–	29
P-5	180	182	182	–	1	183
P-4	256	258	258	–	1	259
P-3	221	219	219	–	(2)	217
P-2	59	57	57	–	–	57
P-1	7	7	7	–	–	7
Sub-total	758	758	758	–	–	758
GS	995	995	995	–	–	995
TOTAL	1 753	1 753	1 753	–	–	1 753

Department				Change		
				P	GS	
Office of the Director General a_/	24	24	24	–	–	24
Department of Technical Co-operation	131	131	134	–	–	134
Department of Nuclear Energy and Safety	197	197	197	–	–	197
Department of Research and Isotopes	276	276	276	–	–	276
Department of Safeguards	505	505	507	–	–	507
Department of Administration	293	293	293	–	–	293
Support Services (Agency Posts)	324	324	320	–	–	320
Reserve of Posts	3	3	2	–	–	2
TOTAL	1 753	1 753	1 753	–	–	1 753
Extrabudgetary posts:						
Common printing services	3	3	3	–	–	3
Library	14	14	14	–	–	14
TOTAL	17	17	17	–	–	17

a_/ Includes Secretariat of the Policy-making Organs and Internal Audit and Evaluation Support.

Reclassification of Existing Posts
Table 69

Organizational Unit	DG	DDG	D	P–5	P–4	P–3	P–2	P–1	Sub–Total	GS	Total
Department of Technical Co–operation											
Div. of Technical Co–op. Programmes	–	–	–	1	–	(1)	–	–	–	–	–
Sub–total	–	–	–	1	–	(1)	–	–	–	–	–
Department of Administration											
Div. of External Relations	–	–	–	–	1	(1)	–	–	–	–	–
Sub–total	–	–	–	–	1	(1)	–	–	–	–	–
TOTAL	–	–	–	1	1	(2)	–	–	–	–	–

ANNEX IX

Adjusted Staffing Table for 1994
Table 70

Organizational Unit	DG	DDG	D	P-5	P-4	P-3	P-2	P-1	Sub-Total	GS	Total
Office of the Director General	1	–	1	2	–	1	–	–	5	3	8
Secretariat of the Policy-making Organs	–	–	1	1	–	1	–	–	3	3	6
Internal Audit and Evaluation Support	–	–	–	2	2	–	1	–	5	5	10
Sub-total	1	–	2	5	2	2	1	–	13	11	24
Department of Technical Co-operation	–	1	–	–	–	1	–	–	2	2	4
Div. of Technical Co-op. Programmes	–	–	2	5	6	7	3	–	23	20	43
Div. of Technical Co-op. Implementation	–	–	1	4	4	8	1	–	18	45	63
Programme Co-ordination Section	–	–	–	1	–	1	3	–	5	7	12
Evaluation Section	–	–	–	1	1	2	–	–	4	3	7
Information Systems Unit	–	–	–	–	1	1	–	–	2	3	5
Sub-total	–	1	3	11	12	20	7	–	54	80	134
Department of Nuclear Energy and Safety	–	1	–	–	–	1	–	1	3	2	5
Div. of Nuclear Power	–	–	1	9	6	6	1	–	23	14	37
Div. of Nuclear Fuel Cycle and W. M.	–	–	1	10	14	1	–	–	26	14	40
Div. of Nuclear Safety a_/	–	–	1	23	15	2	–	–	41	27	68
Div. of Scientific and Technical Information b_/	–	–	1	2	6	6	2	1	18	29	47
Sub-total	–	1	4	44	41	16	3	2	111	86	197
Department of Research and Isotopes	–	1	–	–	–	1	–	–	2	2	4
Joint FAO/IAEA Division	–	–	–	5	7	2	2	–	16	8	24
Div. of Human Health	–	–	1	4	9	2	–	–	16	11	27
Div. of Physical and Chemical Sciences	–	–	1	6	12	5	3	–	27	18	45
The Agency's Laboratory	–	–	1	3	12	7	6	1	30	88	118
IAEA Marine Environment Laboratory – Monaco	–	–	1	2	1	1	4	–	9	17	26
International Centre for Theoretical Physics	–	–	1	4	–	–	2	–	7	25	32
Sub-total	–	1	5	24	41	18	17	1	107	169	276
Department of Safeguards	–	1	–	–	–	–	–	–	1	2	3
Div. of Operations A	–	–	1	14	26	34	–	–	75	33	108
Div. of Operations B	–	–	1	12	22	22	–	–	57	30	87
Div. of Operations C	–	–	1	12	25	27	–	–	65	32	97
Div. of Development and Technical Support	–	–	1	9	15	2	–	–	27	43	70
Div. of Information Treatment	–	–	1	5	11	5	7	–	29	41	70
Div. of Concepts and Planning	–	–	1	9	17	2	1	–	30	18	48
Effectiveness Evaluation	–	–	–	1	5	–	–	–	6	5	11
Programme & Resources Section	–	–	–	3	1	1	1	–	6	7	13
Sub-total	–	1	6	65	122	93	9	–	296	211	507
Department of Administration	–	1	–	–	1	1	–	–	3	2	5
Div. of External Relations	–	–	2	4	2	2	–	–	10	12	22
Conference Services	–	–	–	–	1	–	1	–	2	7	9
Legal Division	–	–	1	5	–	2	–	–	8	5	13
Div. of Personnel c_/	–	–	1	2	3	3	3	–	12	27	39
Staff Association d_/	–	–	–	–	–	–	–	–	–	–	d_/
Office of Management Services	–	–	–	1	–	1	–	–	2	2	4
Div. of Budget and Finance	–	–	1	4	5	8	4	–	22	50	72
Div. of Public Information	–	–	1	1	1	1	1	–	5	10	15
Div. of General Services	–	–	1	2	3	1	2	1	10	104	114
Sub-total	–	1	7	19	16	19	11	1	74	219	293
Support Services											
Contract Administration Services	–	–	–	–	1	–	–	–	1	5	6
Translation and Records Services	–	–	1	6	14	27	–	–	48	49	97
Medical Services	–	–	1	1	1	–	–	–	3	17	20
Library Services	–	–	–	1	–	1	2	–	4	10	14
Data Processing Services	–	–	–	3	8	11	6	1	29	36	65
Printing Services	–	–	–	1	–	–	–	–	1	63	64
Publishing Services	–	–	–	1	–	10	1	–	12	32	44
Radiation Protection Services	–	–	–	1	–	2	–	–	3	7	10
Sub-total	–	–	2	14	24	51	9	1	101	219	320
Reserve of Posts	–	–	–	–	–	–	–	2	2	–	2
TOTAL	1	5	29	182	258	219	57	7	758	995	1 753

a_/ Excluding Radiation Protection Services, which is shown under Support Services.
b_/ Excluding Data Processing Services and Library, which are shown under Support Services.
c_/ Excluding Medical Services, which is shown under Support Services.
d_/ The post of the Staff Council President will remain in the Department from which its President is released.

Proposed Transfer of Posts in 1994

Table 71

Organizational Unit	DG	DDG	D	P-5	P-4	P-3	P-2	P-1	Sub-Total	GS	Total
Department of Technical Co-operation											
Div. of Technical Co-op. Programmes	–	–	–	–	–	1	1	–	2	1	3
Sub-total	–	–	–	–	–	1	1	–	2	1	3
Department of Nuclear Energy and Safety											
Div. of Nuclear Fuel Cycle and W. M.	–	–	–	–	–	–	–	–	–	1	1
Div. of Scientific and Technical Information a_/	–	–	–	–	–	–	–	–	–	(1)	(1)
Sub-total	–	–	–	–	–	–	–	–	–	–	–
Department of Research and Isotopes											
Div. of Physical and Chemical Sciences	–	–	–	(1)	1	–	–	–	–	–	–
International Centre for Theoretical Physics	–	–	–	1	(1)	–	–	–	–	–	–
Sub-total	–	–	–	–	–	–	–	–	–	–	–
Department of Safeguards											
Div. of Operations A	–	–	–	–	1	(1)	–	–	–	2	2
Div. of Operations B	–	–	–	–	–	(2)	–	–	(2)	–	(2)
Div. of Operations C	–	–	–	–	(1)	3	–	–	2	(2)	–
Div. of Information Treatment	–	–	–	–	–	–	–	–	–	2	2
Sub-total	–	–	–	–	–	–	–	–	–	2	2
Department of Administration											
Div. of External Relations	–	–	–	–	(1)	1	–	–	–	–	–
Conference Services	–	–	–	–	1	(1)	–	–	–	–	–
Sub-total	–	–	–	–	–	–	–	–	–	–	–
Support Services											
Data Processing Services	–	–	–	–	–	–	–	–	–	1	1
Sub-total	–	–	–	–	–	–	–	–	–	1	1
Reserve of Posts	–	–	–	–	–	(1)	(1)	–	(2)	(4)	(6)
TOTAL	–	–	–	–	–	–	–	–	–	–	–

a_/ Excluding Data Processing Services and Library, which are shown under Support Services.

ANNEX IX

Transfer of Posts to the Post Reserve
Table 72

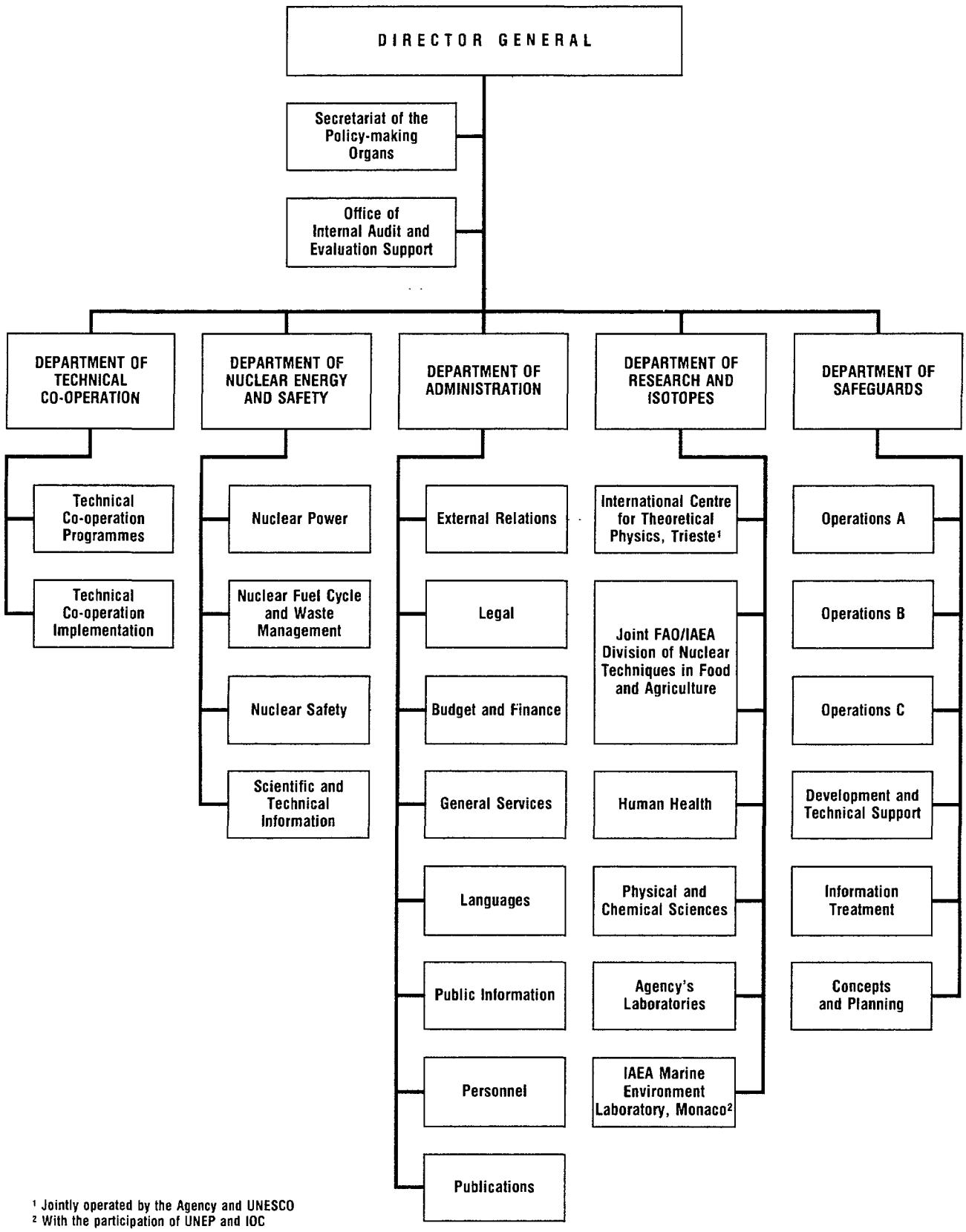
Organizational Unit	DG	DDG	D	P–5	P–4	P–3	P–2	P–1	Sub–Total	GS	Total
Support Services											
Printing Services	–	–	–	–	–	–	–	–	–	(4)	(4)
Publishing Services	–	–	–	–	–	(1)	–	–	(1)	–	(1)
Sub–total	–	–	–	–	–	(1)	–	–	(1)	(4)	(5)
Reserve of Posts	–	–	–	–	–	1	–	–	1	4	5
TOTAL	–	–	–	–	–	–	–	–	–	–	–

Changes to Reflect Current Organizational Structure
Table 73

Organizational Unit	DG	DDG	D	P–5	P–4	P–3	P–2	P–1	Sub–Total	GS	Total
Department of Technical Co–operation											
Programme Co–ordination Section	–	–	–	–	(1)	(1)	–	–	(2)	(3)	(5)
Information Systems Unit	–	–	–	–	1	1	–	–	2	3	5
Sub–total	–	–	–	–	–	–	–	–	–	–	–
Department of Safeguards											
Departmental Services	–	–	–	(4)	(6)	(1)	(1)	–	(12)	(12)	(24)
Effectiveness Evaluation	–	–	–	1	5	–	–	–	6	5	11
Programme & Resources Section	–	–	–	3	1	1	1	–	6	7	13
Sub–total	–	–	–	–	–	–	–	–	–	–	–
TOTAL	–	–	–	–	–	–	–	–	–	–	–

ORGANIZATIONAL CHART

(as of 1 January 1994)



[1] Jointly operated by the Agency and UNESCO
[2] With the participation of UNEP and IOC