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International Atomic Energy Agency

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INDC INTERNATIONAL NUCLEAR DATA COMMITTEE

CHAIRMAN'S REPORT ON THE INDC FOR 1970 AND 1971

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This report covers the two-year period of my incumbency as Chairman of the International Nuclear Data Committee (INDC), January 1970 through December 1971. It is intended to point out the highlights of this second phase in the existence of the Committee as a continuing entity within the framework of the International Atomic Energy Agency (IAEA). The events, accomplishments and activities pertinent to the INDC are described in detail in the official minutes of the meetings and in the documents generated through the auspices of the Committee. In this account, however, it is hoped to provide a more personal view of the strengths, weaknesses, and future directions of the INDC.

Milestones

The historically major visible events during this period begin with the Helsinki Conference on Nuclear Data for Reactors, June 15-19, 1970, preceded by two meetings of experts convened by the IAEA on ν values for the main fissile isotopes (June 10-11, 1970) and on the status of α (^{239}Pu) data (June 12, 1970), both held in Studsvik. This most successful and valuable series of meetings provided the necessary working interchange amongst data measurers, compilers, evaluators and users. It is hardly possible to emphasize too much that working conferences of this kind can only be brought about as a result of the understanding in depth of the nature of the nuclear enterprise by a group of broadly-based scientists with common scientific interests.

These meetings were followed immediately by the third meeting of INDC held in Vienna, June 22-26, 1970, officially reported in INDC 6/L. Major new directions of Committee interest were developed during this meeting in the areas of data needs for safeguards, for fusion energy, dosimetry and shielding and the question of possible international participation in "open" underground nuclear tests was considered as a possibility to optimize the use of such time-of-flight neutron sources for difficult cross section measurements. It was recognized that the traditional responsibilities, for instance for standards, discrepancies, compilation and evaluation, etc., were being broadened in ways which required careful examination to determine whether the Committee, as constituted, had both the interest and the capability to assume these additional activities. This was particularly true in the area of non-neutron nuclear data where a group of scientists with primarily different interests had a strong impact on the broad responsibilities of INDC, and in the area of targets and samples.

It was highly gratifying to note the high degree of accomplishment of the Nuclear Data Section of the IAEA, which was finally beginning to achieve effective performance in a large share of the areas which the Committee had previously recommended, as well as full acceptance by their peer group in the neutron data compilation field. This activity is detailed in INDC(NDS)23/G.

In the administrative area, important firming-up actions were taken, amongst others to assure broad stimulation of reports from countries not represented on the INDC, to reformulate the Methods of Work of the INDC, and to accept an Italian representative as a regular member of the Committee. Initial discussions took place

concerning the free exchange of evaluated nuclear data within the framework of IAEA/INDC. This discussion was directed to providing some definitive steps by the time of the next meeting. It was also agreed that standing subcommittees established by INDC should conduct necessary business during the time between meetings.

More than sixty scientific technical reports were submitted for this third meeting of INDC. These documents provide a remarkably complete overview of the growing world activity in the nuclear data field during this period.

The fourth meeting of INDC took place at the Bhabha Atomic Research Centre, Trombay, India, July 12-16, 1971. Because of the turnover of appointments, there were many new members of the Committee including a first-time member from Italy. It would be helpful if the Agency would pay careful attention to turnover of membership to assure continuity in the activities of the Committee.

During this meeting the functioning of the standing subcommittees was observed to have many advantages. In particular, such important subjects as "Standards" and "Discrepancies" are clearly best served by continuous attention. Subcommittees on Safeguards, Targets and Samples, and non-Neutron Nuclear Data are now in existence for the purpose of remaining au courant in these rapidly changing subjects. With respect to non-neutron nuclear data, the Committee agreed that many aspects of such information were closely pertinent to the general responsibilities of INDC and, although not of highest priority relative to neutron data, it would be necessary for the INDC to influence and monitor the non-neutron nuclear data activities which might be carried out under IAEA auspices.

The question of wide dissemination of evaluated nuclear data was again discussed. It was agreed that initial steps in this direction could be accomplished if there was a full and free interchange of evaluated neutron standard reference data for the isotopes ^{1}H, ^{3}He, ^{6}Li, ^{10}B, ^{12}C, and ^{235}U. Further exchanges might be expected to follow should such an exchange prove fruitful.

The question of doing neutron physics experiments at an underground nuclear detonation was considered again and cost figures for participating in such experiments were provided.

In addition to the regular services provided by the Nuclear Data Section of IAEA, it was arranged that there will now be added the compilation and production of a newly approved World Request List. This list will be formed by merging requests provided by the non-OECD countries with those already being put into RENDA. This World Request List should begin to appear in 1972 and will relieve EANDC of this responsibility while greatly increasing the coverage.

Of great interest and value during the Bombay meeting of INDC was a Topical Conference on Neutron Induced Fission arranged by BARC physicists with participation from the Tata and Saha Institutes and selected members of INDC. The Topical Conference as well as the visits to BARC facilities are examples of the important professional contacts which are provided between Committee members and Laboratory staff when the Committee meets away from Vienna; such contacts make possible a deeper understanding on the part of Committee members of the capabilities and problems of nuclear energy laboratories in Member States and, conversely, provide stimulation to the scientists of the region in which the meeting is held.

Definite continuing progress in the capabilities of the NDS was noted. However, additional responsibilities were also beginning to place a serious unanticipated workload on the Nuclear Data Section, particularly since some of these new responsibilities already have been accepted by the Agency, such as the new World Request List and an increased responsibility in the area of non-neutron nuclear data.

Expectations

INDC has now achieved a maturity which has resulted in a highly respected position in the international nuclear data field. With the additional reports appearing for the fourth meeting and until January 1972 a total of 156 documents and reports have appeared during the past two years. Even a cursory examination of these reports shows the great breadth of coverage of Member States and technical activities from those Member States which have highly developed nuclear energy programs to those which maintain primarily an educational or research and development status. Their great interest is clearly apparent and is stimulated by the mechanisms which INDC has established which allow even those Member States having small endeavors to have access to the Committee through their liaison officers, now 36 in number, the routine circulation of Committee documents and the receipt of progress reports from about two-thirds of the smaller countries within the NDS service area.

I believe that the existence of this working Committee within the framework of IAEA is of recognized great value to all participating Member States and to the IAEA. Its contributions to the nuclear energy field can only grow if care is taken to retain members of proven high capability and respect in their fields.

It would appear that the compilation activities of the NDS are eminently successful and widely accepted; being a working activity of the Agency, this effort has shown that such programs can indeed be done successfully within the Agency and gives one encouragement to consider other possible working projects in the Agency. One such new program now in the early stages of development is the Agency's assistance to Member States in the procurement of separated isotopes in the form of targets for applied nuclear data measurements. New programs must, of course, be carefully considered for their natural international character; in particular, such activities as a broadly based standards laboratory would appear to fit this criterion.

I, therefore, feel highly optimistic for the future of an INDC, responsive to the needs of the IAEA and its Member States, and with considerably greater responsibility developing over the next few years. At this time the Chairmanship of INDC becomes the responsibility of the USSR and it is with confidence and best wishes that I turn over the gavel to the new Chairman.

In closing I wish to mention the passing of a most valued member of INDC shortly after the Bombay meeting, Dr. Ernest Rae of the U.K. We shall miss him sorely.

Respectfully submitted,

Original signed by
George A. Kolstad

George A. Kolstad, Chairman
International Nuclear Data Committee
(1970-1971)