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PDR 10/783

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COMBINED SUMMARY AND MINUTES OF THE MEETING OF THE  
ACRS SUBCOMMITTEE ON REACTOR RADIOLOGICAL EFFECTS  
JULY 31, 1985  
WASHINGTON, D. C.

The ACRS Subcommittee on Reactor Radiological Effects met on July 31, 1985 in Room 1167, 1717 H St. NW., Washington, D. C. The purpose of the meeting was to review the efforts of the Institute of Nuclear Power Operations (INPO) in working with licensees to assure the effective application of the ALARA criterion in radiation protection programs at commercial nuclear power plants. Also included was a review of the preliminary work of the NRC Staff in their evaluation of the success of the INPO efforts.

Notice of this meeting was published in the Federal Register on Monday, July 22, 1985 (Attachment 1). Members of and consultants to the Subcommittee heard presentations on and discussed the above-named subject in accordance with the tentative agenda (Attachment 2). Materials distributed during the meeting are listed in Attachment 3. Copies of these documents are on file in the ACRS office.

The meeting was open to public attendance except for that portion dealing with Excessive Personnel Radiation Exposures, INPO Document SOER-85-3, because it contained INPO Proprietary Information. No written statements were received from members of the public and no one requested an opportunity to make an oral statement. A list of persons attending the meeting is given in Attachment 4; they are also listed below grouped according to affiliation.

DESIGNATED ORIGINAL

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Attendees

ACRS Subcommittee Members

D. Moeller, Chairman  
C. Mark  
R. Axtmann

ACRS Consultants

M. Steindler  
R. Kathren  
M. First

ACRS Staff

O. Merrill

ACRS Fellows

J. Kotra

INPO Staff

W. Kindley

NRC Staff

D. Muller  
R. Serbu

B. Dalrymple  
O. Lynch, Jr.  
J. Buchanan  
L. Cunningham

Members of the Public

Four Persons

Opening Statement

Dr. D. W. Moeller, Chairman, opened the meeting at 8:30 a.m. with a statement regarding the conduct of the meeting. He introduced the members of the ACRS Subcommittee, consultants and staff and confirmed the tentative agenda as final and named the topics to be covered in the meeting. He stated that a transcription was being made of the open portions of the meeting.

INPO Presentation - W. Kindley, Deputy Director, Radiological Protection and Emergency Preparedness Division, INPO

Mr. Kindley reviewed the activities of INPO in working with commercial plant licensees to improve their radiation protection programs. This was an informal, question and answer type of presentation using the handout material (Item 1, Attachment 3), "1984 Industry Performance in Radiological Protection," as the basis for discussion.

The summary of Mr. Kindley's presentation was that radiation protection has improved over the past five years, showing a downward trend in collective exposure and in solid radioactive waste output for both PWR and BWR units. Also showing substantial decrease over the same period are the number of personnel exceeding 5 rem at any one facility, and the number of workers receiving exposures exceeding regulatory limits. Their goal, encouraged by H. Denton of NRC, is an annual reduction of 10% in occupational collective dose and in waste volume over the next several years.

Following are some of the more pertinent points of his presentation.

1. INPO is pushing utilities to reduce the number of workers at nuclear power plants, to reduce the dose per worker, and thereby to lower the collective occupational dose.
2. INPO's evaluation excludes plants already shut down (e.g. Humboldt Bay, Indian Point 1, TMI-2) and plants with less than one year operation. Plants in these categories are not typical operating plants and could therefore bias the data base.
3. Indicators used in INPO's evaluation include:
  - 1) Person-rem/year (i.e., collective occupational dose/year)
  - 2) Average dose/person
  - 3) Number of square feet of contaminated areas within each plant
  - 4) Annual output of solid waste

4. Indicators of management involvement in various aspects of radiation protection:
  - 1) Annual goals or job goals
  - 2) Tracking personnel contamination
  - 3) Tracking positive whole body count
  - 4) Performing independent assessments
  - 5) Making effective use of radiological engineers

Further details on Mr. Kindley's presentation and the exchange of questions and answers among those present are available in the transcript made of this meeting.

Review of SOER 85-3 - W. Kindley

In closed session, because of the proprietary nature of the material contained in the Significant Operating Experience Report (SOER) 85-3, Mr. Kindley emphasized the non-proprietary, generic material contained in Item 2 of Attachment 3. He stated that their studies have shown that the occurrence of accidents almost always involves most or all of the following six precursors to radiological incidents:

1. Inaccurate or incomplete surveys
2. Inadequate or non-existent radiological work permits (RWP)
3. Insufficiently trained radiological protection technicians

4. Workers not complying with rules
5. Supervisors not feeling accountable
6. Station management not involved in radiological protection

Mr. Kindley stated that these factors were far more meaningful to discuss than specific events since, in an INPO review of six events, all 6 of these factors were present in three of the six events, 5 factors were present in two events, and 4 factors were present in one event. INPO's emphasis is to work to correct these six errors, particularly the sixth one, which is principally one of attitude on the part of plant management. He concluded by saying that the probability of a major radiological accident will be significantly reduced if these six errors are corrected.

NRC Staff Presentation - D. Muller, Assistant Director, Division of Radiation Protection, NRR, and R. Serbu, Task Manager

Mr. Muller introduced the topic of the Staff's presentation, "Power Reactor Radiation Protection and ALARA Evaluation Program." He stressed the fact that the material to be presented was of a preliminary nature since the 2-year task would not end until September, 1985.

Mr. Serbu indicated that the program is essentially an evaluation of the effectiveness of INPO's ALARA program, and that there is close coordination and cooperation between them and INPO, except in the area of information and data sharing. This is intentional for the purpose of

independent validation of results rather than merely confirmation of same. He stated that NRC's data are not yet fully compiled and analyzed. Mr. Serbu identified the eleven criteria used in their evaluation:

1. Dose goals, dose tracking in use
2. Individual and collective doses
3. Personnel exceeding dose limits
4. Low-level radwaste volume
5. Contamination instances
6. Extent of contaminated area
7. Radiological training
8. Making effective use of radiological engineers
9. Independent assessment of Health Physics program
10. Radiation Protection staff stability
11. SALP (Systematic Assessment of Licensee Performance) trends in radiation protection

Of these, he said that information is not directly available to NRC under criteria 1, 5, 7, 8 and 9, but it is to INPO.

Mr. Serbu's presentation was quite exhaustive and can be reviewed in detail in Item 3 of Attachment 3. The preliminary conclusions of the study are:

1. Performance is probably at a satisfactory level; most trends indicate improvement
2. There are clearly poor performers that affect overall industry trends

3. The improvement cannot be specifically attributed to any one effort or group; contributors include:

- 1) Regional inspection program in ALARA
- 2) Health physics appraisal program and follow-up
- 3) INPO evaluations, assistance visits, good practices
- 4) Utility independent efforts
- 5) American Nuclear Insurers
- 6) NRR licensing reviews incorporating ALARA
- 7) Threat of NRC rulemaking in ALARA
- 8) Increased NRC management attention to radiation protection/ALARA

Messrs. Muller and Sertu do not anticipate that the results of this evaluation will be published as a NUREG. Most probably, the results will be issued as a report to the Commissioners. Their milestones call for the following three items to be accomplished by September, 1985:

- 1) Evaluation of INPO/industry success completed
- 2) Radiation Protection Plan Regulatory Guide either issued or withdrawn based upon determination of success or failure of INPO/industry program
- 3) Technical resolution complete (if program is acceptable, issue close-out document memo to EDO. If program is unacceptable, develop milestones necessary for approval for a Radiation Protection Plan Regulatory Guide).

Executive Session

Following the preceding presentations and discussions, the Subcommittee members and consultants discussed the INPO and NRC radiation protection programs. Recommendations for comments to be made in a letter to the Commissioners regarding the excellence of the INPO program were made. However, concern was expressed about the lack of an identifiable organizational entity in the recent reorganization of NRR, the diminishing, or lack of, research in the radiation protection area and the apparent lack of middle and upper management interest and expertise regarding the radiation protection program.

Immediately following the meeting, D. Moeller, Subcommittee Chairman, drafted two letters, one of which provides ACRS comments on the INPO program on radiation protection. The second letter addresses the subject "Apparent Effect of NRR Reorganization on NRC's Radiation Protection Program." Both of these letters will be presented, along with a report of this meeting, to the full ACRS during their August 8-10, 1985 meeting.

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NOTE: A complete transcript of the meeting is on file at the NRC Public Document Room at 1717 H Street, NW., Washington, D. C. or can be obtained at cost from Ann Riley & Associates, Court Reporters, 1625 I St., NW., Suite 921, Washington, D. C. 20006 (202) 293-3950.



The agenda for subject meeting shall be as follows:

Wednesday, August 7, 1985—8:30 a.m. until the conclusion of business

The Subcommittee will continue its review of GESSAR II for a Final Design Approval applicable to future plants.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the ACRS staff member named below as far in advance as is practicable so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC Staff, its consultants, and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant ACRS staff member, Mr. Richard Major (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m. Persons planning to attend this meeting are urged to contact the above named individual one or two days before the scheduled meeting to be advised of any changes in schedule, etc., which may have occurred.

Dated July 16, 1985

Morton W. Libarkin

Assistant Executive Director for Project Review

[FR Doc. 85-17374 Filed 7-19-85; 8:45 am]  
BILLING CODE 7550-01-01

#### Advisory Committee on Reactor Safeguards; Subcommittee on Reactor Radiological Effects; Meeting

The ACRS Subcommittee on Reactor Radiological Effects will hold a meeting on July 31, 1985, in Room 1167, at 1717 H Street, N.W., Washington, DC.

The meeting will, for the most part, be open to public attendance. However, portions of the meeting will be closed for the discussion of Institute of Nuclear Power Operations (INPO) proprietary information.

The agenda for the subject meeting shall be as follows:

Wednesday, July 31, 1985—8:30 a.m. until the conclusion of business

The Subcommittee will review the INPO Radiation Protection Program, particularly as it relates to a similar and related NRC program.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the ACRS staff member named below as far in advance as is practicable so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee and its consultants will then hear presentations by and hold discussions with representatives of INPO, the NRC Staff, and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant ACRS staff member, Mr. Owen Merrill (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m. Persons planning to attend this meeting are urged to contact the above named individual one or two days before the scheduled meeting to be advised of any changes in schedule, etc., which may have occurred.

Dated July 17, 1985

Morton W. Libarkin

Assistant Executive Director for Project Review

[FR Doc. 85-27373 Filed 7-19-85; 8:45 am]  
BILLING CODE 7550-01-01

#### Advisory Committee on Reactor Safeguards; Subcommittee on Waste Management and Procedures and Administration; Meeting

The ACRS Subcommittee on Waste Management and Procedures and Administration will hold a joint meeting on July 30, 1985, Room 1167, at 1717 H Street, N.W., Washington, DC.

The meeting will, for the most part, be open to public attendance. However, portions of the meeting may be closed for the discussion of individuals as potential consultants to the Waste Management Subcommittee.

The agenda for the subject meeting shall be as follows:

Tuesday, July 30, 1985—8:30 a.m. until the conclusion of business

The Subcommittee will review the ACRS Role in the Civilian High-Level Radioactive Waste Management Program.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the ACRS staff member named below as far in advance as is practicable so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee may exchange preliminary views regarding matters to be considered during the balance of the meeting. The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC Staff and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant ACRS staff member, Mr. Owen S. Merrill (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m. Persons planning to attend this meeting are urged to contact the above named individual one or two days before the scheduled meeting to be advised of any changes in schedule, etc., which may have occurred.

ATTACHMENT 1

TENTATIVE AGENDA  
ACRS SUBCOMMITTEE ON REACTOR RADIOLOGICAL EFFECTS  
JULY 31, 1985  
1717 H STREET, N.W., WASHINGTON, D.C.  
ROOM 1167

Wednesday, July 31

8:30 AM	Introductory Remarks and Objectives	D. Moeller, Chairman
8:45 AM	Industry Success in Achieving ALARA as a Result of INPO's Efforts	Bill Kindley, Deputy Director of Radiological Protection and Environmental Protection Division, INPO
10:15 AM	* * * B R E A K * * *	
10:30 AM (CLOSED)	Excessive Personnel Radiation Exposures (SOER-85-3)	Bill Kindley, INPO
12:00	* * * L U N C H * * *	
1:00 PM	Evaluation of Effectiveness of INPO's Radiation Protection Program	Dan Muller, Assistant Director, Division of Radiation Protection, NRR
3:00 PM	* * * B R E A K * * *	
3:15 PM	Executive Session	
5:00 PM	Adjourn	

ATTACHMENT 2

DOCUMENTS DISTRIBUTED DURING THE  
ACRS REACTOR RADIOLOGICAL EFFECTS SUBCOMMITTEE MEETING  
WASHINGTON, D.C.  
JULY 31, 1985

1. W. R. Kindley, INPO, Presentation Handout, "1984 Industry Performance in Radiological Protection," July 31, 1985
2. W. R. Kindley, INPO, Presentation Handout, "Precursors to Radiological Incidents," Undated (circa May, 1985)
3. R. J. Serbu, Radiological Assessment Branch, NRC Staff, Presentation Handout, "Power Reactor Radiation Protection and ALARA Evaluation Program -- A Preliminary Analysis," July 31, 1985
4. U.S. Nuclear Regulatory Commission Announcement No. 72, Subject: "Reorganization of the Office of Nuclear Reactor Regulation," July 26, 1985

ACRS SUBCOMMITTEE MEETING ON REACTOR RADIOLOGICAL EFFECTSLOCATION ROOM 1167DATE - JULY 31, 1985ATTENDANCE LIST

PLEASE PRINT:

NAME	AFFILIATION
D W Moller	A C R S. Member
B Axtmann	" "
C Mark	" "
M Steindler	" Consultant
M First	" "
R KATHREN	" "
F PURA	Court Reporter
W R KINDLEY	INPO
D R Moller	NRC/NRR/DSI
R J. SERBU	NRC/NRR/DSI
TL JENTE	NUSOSC
JANET KETRA	ACRS Fellow
L S Watson	Bechtel / SERCH
C J Merrill	ACRS Staff
B.A. Dalrymple	NRC/NRR/DSI
O.D.T. LYNCH, JR.	NRC/NRR/DSI/RAB/RPS
John Buchanan	McGraw-Hill
John Buchanan	NRC/IE/ <sup>DI</sup> <del>DEASTP</del> /ORPB
L.J. CUNNINGHAM	NRC/IE/DI

LOCATION:

DATE:

### ATTENDANCE LIST

PLEASE PRINT:

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