



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON D.C. 20555

JAN 22 1991

Project No. 669

APPLICANT: Electric Power Research Institute (EPRI)
PROJECT: Advanced Light Water Reactor (ALWR) Utility Requirements Document for Passive Plants
SUBJECT: SUMMARY OF MEETING TO DISCUSS ISSUES FOR THE EPRI ALWR UTILITY REQUIREMENTS DOCUMENT FOR PASSIVE PLANTS (NON-PROPRIETARY)

On November 29-30, 1990, the staff met with representatives from EPRI at the Holiday Inn in Bethesda, Maryland to discuss issues associated with the EPRI ALWR Utility Requirements Document for passive plants. Enclosures 1 and 2 list the meeting attendees on the 29th and 30th of November, respectively. Enclosure 3 provides the meeting agenda. Enclosure 4 provides transcripts of the open session on November 29th and the viewgraphs presented (non-proprietary).

Significant portions of the meeting were closed to the public because EPRI has requested that the ALWR Utility Requirements Document be considered proprietary information, and therefore, be withheld from public disclosure in accordance with 10 CFR 2.790. The staff is reviewing the request, and upon resolution of the issue, final disposition of the meeting minutes will be determined.

EPRI opened the meeting by citing the future energy requirements that needed to be met by new passive nuclear power plants. A tentative schedule was discussed to provide the safety evaluation reports (SERs) for the Requirements Documents by February 1992. Additionally, the staff observed that it was not obvious that passive plants were inherently safer than current plants, and noted that it might take years to rewrite the Standard Review Plan to accommodate the review of the new designs.

EPRI presented an examination of the applicability of the 15 evolutionary plant certification issues delineated in SECY-90-016 to the passive plant designs. Recognizing that these issues were under review by the NRC, EPRI believed that passive plants met the intent of 12 of those 15 as listed below:

- 1) ALWR Public Safety Goal
- 2) ATWS
- 3) Mid-Loop Operation
- 4) Station Blackout
- 5) Fire Protection
- 6) Intersystem LCOA
- 7) Core-Concrete Interaction and Debris Cooling
- 8) High-Pressure Core Melt Ejection
- 9) ABWR Containment Vent Design
- 10) Equipment Survivability
- 11) Operating Basis Earthquake/Safe Shutdown Earthquake
- 12) Inservice Testing on Pumps and Valves

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JAN 22 1991

EPRI then stated that 3 of those 15 mericed consideration for passive plants as listed below:

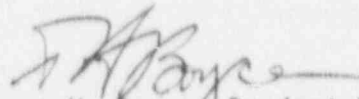
- 13) Source Term
- 14) Hydrogen
- 15) Containment Performance

Further sources of important regulatory issues will come from the review of the Evolutionary and Passive ALWR Requirements. Additionally, EPRI will submit a paper to the NRC detailing a list of "Regulatory Issues Central to Design." This paper will be a joint effort of EPRI, the Department of Energy, Westinghouse and General Electric. A preliminary list of those issues is shown below:

- o OBE and Analysis Methods
- o Technical Basis for Emergency Planning Criteria
- o Source Term
- o Hydrogen Control
- o Dedicated Containment Vent Penetration
- o Safe Shutdown
- o Control Room Habitability
- o Modern I & C
- o Seismic Issues - Generic Resolution
- o Containment Performance Criteria - Leakage
- o Core Debris Coolability
- o In Service Testing of Pumps and Valves
- o Leak-Before-Break for Subcompartment Design
- o Active Backups for Passive Systems
- o NRC Endorsement of Latest Codes and Standards
- o Safety Classification

EPRI stated that they would provide written responses to the discussion questions for the meeting within 60 days (January 29, 1991).

A meeting to discuss the status of the EPRI Requirements Documents was agreed to and is tentatively scheduled for May 1991. Splinter meetings were agreed to in order to pursue outstanding issues in the areas presented. Notices of these meetings will be published pursuant to "Open Meeting Statement of NRC Staff Policy," 43 Federal Register 28058, June 28, 1978.



Thomas H. Boyce, Project Manager
Standardization Project Directorate
Division of Advanced Reactors and
Special Projects

Enclosures: As stated

cc w/enclosures:
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Original Signed By:

Thomas H. Boyce, Project Manager
Standardization Project Directorate
Division of Advanced Reactors and
Special Projects

Enclosures: As stated

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See next page

LA:PDST
PShea *PHS*
01/22/91

PM:PDST
TBoyce *TB*
01/22/91

D:PDST *CM*
CMiller
01/22/91

ALWR Utility Steering Committee
Project No. 669

EPRI

cc: Mr. E. E. Kintner
ALWR Utility Steering Committee
GPU Nuclear Corporation
One Upper Pond Road
Parsippany, New Jersey 07054

Mr. William Sugnet
Nuclear Power Division
Electric Power Research Institute
P.O. Box 10412
Palo Alto, CA 94303

Mr. Daniel F. Giessing
Division of Nuclear Regulation
and Safety
Office of Converter Reactor
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JAN 28 1991

DISTRIBUTION:

Central File

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NRC Participants

MEETING ATTENDEES
 EPRI REQUIREMENTS DOCUMENT FOR
 ALWRS WITH PASSIVE SAFETY SYSTEMS
 NOVEMBER 29, 1990

| <u>NAME</u> | <u>ORGANIZATION</u> | <u>NAME</u> | <u>ORGANIZATION</u> |
|---------------------|---------------------|------------------------|---------------------|
| 1. F. Congel | NRC/NRR | 44. Richard Eckenrode | NRR/DLPQ/HFAB |
| 2. Joseph Joyce | NRC/NRR/SICB | 45. A. El-Bassioni | NRC/NRR/PRAB |
| 3. Janice Moore | NRC/OGC | 46. Patricia Jehle | NRC/OGC |
| 4. C. Y. Li | NRC/NRR/SPLB | 47. Catherine Thompson | NRC/NRR/DLPQ |
| 5. Lynn Connor | NRC CALENDAR | 48. Conrad McCracken | NRC/SPLB |
| 6. Frank Ross | DOE | 49. Terry Schulz | WESTINGHOUSE |
| 7. C. Y. Cheng | NRR/DET/EMCB | 50. John O'Brien | NRC/RES/DE |
| 8. James Norberg | NRC/RES/DE | 51. Faust Rosa | NRC/SECB |
| 9. Brad Hardin | NRC/RES/DRA | 52. Jay Lee | NRC/NRR/PPPB |
| 10. Chuck Hendren | NRR/DRIS/RSGB | 53. Barry Mendelsohn | NRC/NRR/RSGB |
| 11. Ed Goodwin | NRC/NRR/DST | 54. Charles Hinson | NRC/NRR/DREP |
| 12. E. Beckjord | NRC | 55. Luca De Jaco | ENEL/EPRI |
| 13. Robin Galer | EPRI | 56. Stephen Additon | TENERA |
| 14. Jim Metcalf | STONE/WEBSTER | 57. Jack Spraul | NRC/NRR |
| 15. R. L. Rothman | NRC/NRR | 58. D. M. Chopin | MPR |
| 16. David Terao | NRC/NRR | 59. Chuck Johnson | S. LEVY INC. |
| 17. E. Whitaker | EPRI | 60. X. Pouget-Abadie | EDF/EPRI |
| 18. David Strawson | MPR | 61. Charles Brinkman | ABB/CENP |
| 19. Dino Scaletti | NRC/NRR/PDS | 62. Alan Levin | NRR/DST |
| 20. Joe Quirk | GE | 63. Stuart Lewis | EPRI/SAROS |
| 21. Brian McIntyre | WESTINGHOUSE | 64. Rita Beck | WESTINGHOUSE |
| 22. Jim Watt | NRR/DST | 65. J. E. Lyons | NRR/DST |
| 23. Brian Sheron | NRC/RES | 66. Mark Rubin | NRC/NRR |
| 24. Matt Chiramal | NRC/NRR | 67. Tony Gody | NRC/NRR |
| 25. Mike Kaltman | NRC/NRR | 68. Jack Kudrick | NRC/NRR/SPLB |
| 26. Y. Gene Hsui | NRC/NRR | 69. Robert Pierson | NRC/NRR/DARSP |
| 27. James Lazevnick | NRC/NRR/SELB | 70. S. Singh Bagra | NRC/NRR/PMAS |
| 28. H. L. Brammer | NRC/NRR/DET | 71. John Tsao | NRC/NRR/DET/EMCB |
| 29. Victor McCree | NRC/NRR/PDS | 72. Loren F. Donatelli | NRC/NRR/PDS |
| 30. Tom Boyce | NRC/NRR/PDS | 73. Dennis Crutchfield | NRC/NRR/DARSP |
| 31. J. G. Partlow | NRC/NRR/ADP | 74. David Sharp | WESTINGHOUSE |
| 32. Atam Rao | GE | 75. Thomas Kenyon | NRC/NRR/PDS |
| 33. James Wilson | NRC/NRR/PDS | 76. William Travers | NRC/NRR/DARSP |
| 34. Jerry Wilson | NRC/RES/ARGB | 77. Charles Miller | NRC/NRR/PDS |
| 35. Tom Murley | NRC/NRR | 78. Jim Richardson | NRC/NRR |
| 36. Gary Holahan | NRC/DST | 79. Ashok Thadani | NRR/DST |
| 37. Robert Jones | NRR/DST/SPXB | 80. Jack Roe | NRR/DLPQ |
| 38. Cecil Thomas | NRR/DLPQ | 81. Bill Brach | NRC/NRR/DLPQ |
| 39. Jared Wermiel | NRC/NRR/DLPQ | 82. George Bockhold | EPRI/SCS |
| 40. Bill Sugnet | EPRI | 83. Ted Marston | EPRI |
| 41. Ed Kintner | GPU-N | 84. Bill Layman | EPRI |
| 42. John Trotter | EPRI | 85. David Leaver | EPRI |
| 43. Ed Rumble | EPRI | | |

MEETING ATTENDEES
 EPRI REQUIREMENTS DOCUMENT FOR
 ALWRS WITH PASSIVE SAFETY SYSTEMS
 NOVEMBER 30, 1990

| <u>NAME</u> | <u>ORGANIZATION</u> | <u>NAME</u> | <u>ORGANIZATION</u> |
|-----------------------|---------------------|-------------------------|---------------------|
| 1. Thomas Kenyon | NRR/PDS | 41. James Wilson | NRR/PDS |
| 2. Jerry Wilson | NRR/RES | 42. Charles Miller | NRR/PDS |
| 3. Leonard Soffer | NRR/RES | 43. Tom Murley | NRC/NRR |
| 4. James Partlow | NRR | 44. William Travers | NRR/DARSP |
| 5. Dennis Crutchfield | NRR/DARSP | 45. Gary Holahan | NRR/DST |
| 6. Ashok Thadani | NRR/DST | 46. Farouk Eltawila | RES/DSR |
| 7. Jack Roe | NRR/DLPQ | 47. Jared Wermiel | NRR/DLPQ/LHFB |
| 8. Cecil Thomas | NRR/DLPQ | 48. Bill Sugnet | EPRI |
| 9. Ted Marston | EPRI | 49. Ed Kintner | GPU-N |
| 10. John Taylor | EPRI | 50. Bill Layman | EPRI |
| 11. John Trotter | EPRI | 51. Ed Rumble | EPRI |
| 12. Dave Leaver | EPRI/TENERA | 52. J. Brian Reid | WESTINGHOUSE |
| 13. Dwight Harrison | MPR ASSOC. | 53. David Strawson | MPR ASSOC. |
| 14. X. Pouget-Abadie | EDF/EPRI | 54. Luca De Jaco | ENEL/EPRI |
| 15. Everett Whitaker | EPRI/TVA | 55. Chuck Johnson | S. LEVY, INC. |
| 16. Doug Chopin | MPR ASSOC. | 56. Atam Rao | GE |
| 17. Dan Giessing | DOE | 57. Brian McIntrye | WESTINGHOUSE |
| 18. Terry Schulz | WESTINGHOUSE | 58. Richard Eckenrode | NRR/DLPQ/LHFB |
| 19. Jack Scarborough | OCMK ROGERS | 59. Jack Guttman | OCM/REMICK |
| 20. C. Y. Li | NRC/NRR/SPLB | 60. Chatherine Thompson | NRC/DLPQ/LHFB |
| 21. Conrad McCracken | NRC/SPLB | 61. Tom Boyce | NRC/NRR/PDS |
| 22. Loren Donatelli | NRC/NRR/PDS | 62. R. W. Borchardt | NRC/NRR/DARSP |
| 23. Alan Levin | NRC/NRR/DST | 63. James Lazevnick | NRC/NRR/SELB |
| 24. Mike Kaltman | NRC/NRR/PMAS | 64. Y. Gene Hsui | NRC/NRR/SRXE |
| 25. J. E. Lyons | NRC/NRR/DST | 65. Jim Watt | NRC/NRR/DST |
| 26. Mark Rubin | NRC/NRR/DST | 66. Robert Pierson | NRC/NRR/DARSP |
| 27. Ed Goodwin | NRC/NRR/DST | 67. F. Congel | NRC/NRR |
| 28. Jay Lee | NRC/NRR | 68. Brad Hardin | NRC/RES |
| 29. Faust Rosa | NRC/NRR/SELB | 69. James A. Norberg | NRC/RES/DE |
| 30. Jim Richardson | NRC/NRR/DET | 70. Neal Hunemuller | NRC/NRR/DLPQ |
| 31. Lew Miller | NRC/REGION V | 71. Jim Stewart | NRC/NRR/SICB |
| 32. Scott Newberry | NRC/NRR/DST | 72. Joseph Joyce | NRC/NRR/SICB |
| 33. Matt Chiramal | NRC/NRR/SICB | 73. Jerry Wachtel | NRC/RES/HFB |
| 40. E. Beckjord | NRC/RES | | |

Speaker

Thursday, November 29

| | | | |
|--------|-------|--|---|
| open | 8:30 | Introduction -Utility Steering Committee/EPRI | E. Kintner J. Taylor T. Marston |
| | 9:00 | Introduction -NRC Overview | NRC |
| open | 9:30 | Process & Schedule for Passive Plants - Industry Needs and Expectations. | W. Sugnet |
| | | Process & Schedule for Passive Plants - NRC Views, Plans and Constraints | NRC |
| open | 10:15 | Certification Issues (15) -- Overview | J. Trotter |
| | | Break | |
| closed | 10:30 | Certification Issues - - Severe Accident - Other | D. Leaver J. Trotter |
| | 12:15 | Lunch | |
| closed | 1:15 | PRA Insights for ALWR Passive Plant Utility Requirements Document | S. Lewis |
| closed | 2:30 | Passive Plant Systems -- Topical Discussion | G. Bockhold J. Trotter W. Sugnet All |
| | 5:00 | Adjourn | |

Friday, November 30

| | | | |
|--------|-------|---|--------------------|
| closed | 8:30 | ALWR Issues - Containment Performance, Source Term and Emergency Planning | D. Leaver |
| closed | 10:30 | ALWR Issues - MMIS | E. Rumble |
| | 12:00 | Lunch | |
| closed | 1:00 | ALWR Issues - Thermal Hydraulics | W. Sugnet / W / GE |
| closed | 1:45 | Open Discussion | All |
| closed | 2:45 | Meeting Summary and Conclusions | NRC/USC |
| | 3:00 | Adjourn | |