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MEMORANDUM FOR: Michael J. Bell, Chief
High-Level Waste Licensing
Management Branch
Division of Waste Management

FROM: Kien C. Chang
High-Level Waste Licensing
Management Branch
Division of Waste Management

SUBJECT: REPORT OF MEETING ON FIN A-3168

Date: March 17, 1983

Time: 9:00 AM to 4:00 PM

Place: 8th Floor Conference Room, Willste Building, Silver Spring, MD

Purpose: To review BNL's Draft Staff Technical Position on Waste Package Reliability.

Attendees: NRC BNL
F. R. Cook Cesar Sastre
K. C. Chang Claudio Pescatore

Summary of Conclusions, Commitments, and Agreements:

The DSTP was reviewed by NRC and BNL during the week of March 14, 1983. This review was continued on March 22, 1983 to complete NRC's comments on the report.

1. A general comment will be included in the beginning of the report to emphasize that examples provided in the report are for illustrative purposes only and do not imply adequacy of methods used for licensing purpose.
2. Mathematics of sample calculations provided in the report will be checked by members of BNL staff (in addition to checking by the authors) to make sure that they are correct. If the mathematics

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have been simplified to give solutions to these calculations, the rationales used will be documented.

3. BNL took notes of Research comments on the DSTP. Changes resulting from these comments will be included in the re-write of the report.
4. A list of 15 IEEE and military standards on reliability of nuclear generating plants and general reliability program requirements were given to BNL together with a copy each for 8 of these standards (Enclosed). These standards were reviewed with BNL. Contents of specific sections in IEE 352-1975 and IEEE 577-1976 were identified. These sections should be discussed in the DSTP. BNL will review them in detail for input to the DSTP re-write.
5. FIN A-3167 contract ends in April. NRC and BNL must determine if an extension is needed for finishing the report.

ORIGINAL SIGNED BY

Kien C. Chang
High-Level Waste Licensing
Management Branch
Division of Waste Management

JFC	: WMHL <i>Kc</i>	: WMHL <i>ML</i>	:	:	:	:	:
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List of Existing Standards on Reliability

- IEEE 352-1975 "General Principals for Reliability Analysis of Nuclear Power Generating Station Protection Systems." Provides general principals and methodology.
- IEEE 577-1976 "IEEE Standard Requirements for Reliability Analysis for the Design and Operation of Safety Systems for Nuclear Power Generating Stations." This standard which has been issued establishes minimal acceptable analysis and documentation.
- IEEE 500-1977 "IEEE Guide to Collection and Presentation of Electrical Electronic and Sensing Component Reliability Data for Nuclear Power Generating Stations." Being reissued to include mechanical equipment.
- MIL-H08K-217C "Reliability Prediction of Electronic Equipment."
- MIL-STD-1629 "Procedures for the Performance of Failure Modes Effects Analysis of Shipboard Equipment."
- MIL-STD-2070 "Procedures for the Performance of Failure Modes Effects and Criticality Analysis for Aeronautical Equipment."
- MIL-STD-756A "Reliability Prediction."
- MIL-STD-757 "Reliability Evaluation from Demonstration Data."
- MIL-STD-781C "Reliability Design, Qualification and Production Acceptance Tests."
- MIL-STD-785A "Reliability Program for System and Equipment Development and Production."
- MIL-STD-882A "System Safety Program for Systems and Associated Subsystems and Equipment."
- MIL-STD-1304 "Reliability and Maintainability Engineering Data."
- MIL-STD-1635 "Reliability Growth Testing."
- MIL-STD-2068 "Reliability Development Tests."
- NUREG/CR-2300 "A Guide to the Performance of Probability Risk Assessments for Nuclear Power Plants."