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CONFIDENTIAL

SUMMARY/MINUTES OF THE SAN ONOFRE 2 & 3 SUBCOMMITTEE MEETING
MARCH 11, 1981
WASHINGTON, D.C.

ACRS-1838

The ACRS Subcommittee on San Onofre 2 & 3 met in Washington, D.C. on March 11, 1981 to continue its review of the plants as part of the ACRS review for operating licenses.

Principal Attendees:

M. Bender, Chairman
D. Ward, ACRS Member
W. Mathis, ACRS Member
M. Carbon, ACRS Member
J. Ray, ACRS Member
I. Catton, ACRS Consultant
S. Ditto, ACRS Consultant
E. Abbott, ACRS Fellow
D. E. Bessette, ACRS Staff
G. Quittschreiber, ACRS Staff

H. Rood, NRR
P. Collins, NRR
R. Benedict, NRR
J. Knight, NRR
C. Thomas, NRR
W. Moody, SCE
J. Willis, SCE
J. Hosmer, Bechtel
J. Purucker, Bechtel
K. Baskin, SCE
W. Burchill, CE
R. Phelps, SCE
W. Schmus, SCE
E. Richardson, Bechtel
W. Strom, SCE
V. Fisher, SCE
R. Daleas, CE
R. Turk, CE
M. Redd, Singer-Link
B. Katz, SCE



No oral or written comments were received from members of the public. Attached is the presentation schedule and a list of documents considered by the Subcommittee.

PLANT STAFFING REQUIREMENTS AND SCHEDULE

H. Rood (NRR) described the status of plant staffing and schedule. Fuel loading is scheduled for 10/15/81, initial criticality for 11/23/81, and 100% power for 4/8/82.

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Currently, there are 66 startup engineers and 102 startup technicians on-site. A startup engineer is defined as an engineer whose time is 100% dedicated to startup activities. The Staff indicated that the startup crew at San Onofre was large compared to other plants. There are 301 total station personnel with 490 required by fuel loading (9/15/81). Mr. Bender noted that NRC had not provided a basis for determining adequacy of staffing with regards to the number of individuals and their qualifications. It was noted that NRC has no criteria for qualifications of non-operations personnel.

STANDARDS FOR OPERATOR TRAINING

P. Collins (NRR) discussed operator training requirements on simulators. The requirements include operating experience at a comparable facility. Although San Onofre is a CE plant, a Westinghouse simulator could be utilized. Mr. Bender requested the Staff provide in writing a statement on what they feel is adequate plant and simulator training for operators.

MANAGEMENT EVALUATION

Mr. Benedict (NRR) presented results of the NRC evaluation of SCE management. A seven-member team from the Staff performed a management audit of SCE in late February 1981. The primary objective was to obtain assurance of corporate dedication to safe plant operation. It was noted by the auditors that the Shift Technical Advisors are inexperienced, and that there had been some shortcomings in the Unit 1 maintenance program which have since been corrected.

Mr. Bender inquired about the Staff's assessment of the functions and effectiveness of the various Safety Groups. There are five separate Safety Groups: Onsite Safety Review Committee (OSRC); Nuclear Control Board (NCB); Shift Technical Advisors (STA); Independent Safety Engineering Group (ISEG); and Nuclear Safety Group (NSG). The OSRC is comprised of onsite management, whereas high-level management make up the NCB. The purpose of the NSG is to review operating experience, design changes, reliability and risk assessment, etc. The STAs and the ISEG are to be comprised of the same group of individuals. The addition of an ISEG is a requirement for NTOLs. Mr. Bender asked that the Staff compare the ISEG/STA practice at San Onofre with that of other plants and give more thought to the matter before they draw conclusions on the proposed San Onofre plan. Mr. Bender noted that the Staff review of the Safety Groups was insufficient.

STRUCTURAL EVALUATION

J. Knight (NRR) summarized the Staff's evaluation of structures. A structural audit, performed by a three-member team from the Staff, reviewed selected components and design codes. The structural audit by the Staff was similar to that performed for Diablo Canyon. The design review of San Onofre was performed by a consultant for the Staff. The Staff concluded that the structural and mechanical design of San Onofre is excellent. The Staff believes that significant margins exist between operating stresses and code allowables. Mr. Bender noted that the Staff should have a more formalized method of verifying codes used in design of the plant.

Dr. Catton noted that NRC's reviews of functional interactions to date have been minimal. The Staff is hoping to improve this area in the future.

PLANT STAFFING

Mr. Dietch (SCE) provided information on plant staffing for San Onofre 2&3. Currently there are 361 individuals on hand: 189 operations, 56 maintenance, 82 plant engineering, 9 health physics, and 25 administrative.

PERSONNEL TRAINING PROGRAMS

J. Willis (SCE) discussed training programs. The training programs meet Regulatory Guide 1.8, Revision 2. The training staff numbers 25 and will eventually grow to 44. The operators undergo a 52-week training program, including three to five weeks on a CE simulator. Potential candidates are tested prior to entry. Future candidates for operator will, typically, be high school graduates with no prior nuclear experience. The candidates will have the opportunity to eventually progress to shift supervisor. There will be six operator crews, with one in training at all times.

Mr. Bender inquired how the determination is made as to which maintenance personnel are qualified for which duties. The reply was that the determination was the duty of the responsible supervisor. For relatively important jobs, higher management would become involved.

SIMULATOR PROGRAM

B. Katz (SCE) described SCE's plans for purchasing a simulator. SCE utilized a simulator consultant in determining the simulator specifications. A contract was awarded to Singer-Link for the purchase. The simulator will meet the requirements of ANSI 3.5. SCE had discussions were held with two utilities with 3-unit sites as well as with CE to guide them in their planning for the simulator. There will be a program to feed back experience from use of the simulator into emergency procedures. Performance monitoring of the operators will be carried out.

Dr. Catton expressed serious doubt about the claim made by SCE and Singer-Link that the simulator will realistically reflect thermal-hydraulic behavior of the plant over the entire plant operating range, for both normal and abnormal conditions and including two-phase flow.

SYSTEMS INTERACTIONS

J. Hosmer (Bechtel) discussed functional interactions involving the interface between the air system and water systems. Bechtel has attempted to minimize the potential for water ingress into the air system from water systems.

ALARA PROGRAM AND ACCIDENT SAMPLING CAPABILITY

J. Purucker (Bechtel) discussed these two subjects. Bechtel paid close attention during plant design to features to minimize personnel exposures. For example, where possible, components that require surveillance and maintenance such as instruments are located in low radiation areas.

The sampling lab as it existed prior to TMI would not have been capable of handling high radiation samples. A post-accident sampling system was designed and installed. A separate reactor coolant system sampling line is provided for high radiation situations. Grab samples can be diluted or undiluted. Gamma-scan capability is provided. Shielding was reviewed for adequacy and improved where necessary.

ROLE OF NRC IN EMERGENCY

K. Baskin (SCE) discussed the perceived role of the NRC in an emergency. SCE expects the NRC would give oversight, advice, and recommendations, but that the operation of the plant is still SCE's responsibility. Press releases would be coordinated between NRC and SCE. An emergency drill is planned for early April.

INSTRUMENTATION TO DETECT INADEQUATE CORE COOLING

W. Burchill (CE) discussed this subject. The instrumentation consists of the subcooling margin meter, the heated junction thermocouple (HJTC) system, and the core exit thermocouples. The HJTC measures the inventory of water above the core. The core exit thermocouples can be used to infer clad temperatures and, in turn, core water level. Mr. Bender indicated that the ACRS will hold a meeting to review the subject of water level indication in the reactor vessel on a generic basis.

IMPLEMENTATION OF REGULATORY GUIDE 1.97

R. Phelps (SCE) discussed Reg. Guide 1.97. Current requirements call for implementation by June 1983 except for NUREG-0737 items, which must be implemented earlier. Reg. Guide 1.97 addresses about 60 different variables. San Onofre presently meets about two-thirds of the Reg. Guide 1.97 requirements. The remainder will require addition of measurement channels, extended measurement ranges, or upgraded qualifications. SCE expected that the plants can meet the intent of Reg. Guide 1.97.

GRID RELIABILITY

W. Schmus (SCE) discussed this subject. The plant has four independent operating buses. The area possesses a favorable climate with few lightning storms, and with no hurricanes, tornadoes, or ice storms. There are three 500 kV ties with Pacific Gas and Electric, five 500 kV ties to Arizona, many ties to Los Angeles Water and Power, and a tie to San Diego Gas and Electric. SCE has not lost their grid in 35 years. There is an automatic load shedding system, and an islanding system to separate the utilities.

DC POWER RELIABILITY

E. Richardson (Bechtel) discussed DC power reliability. The batteries have about two and one-half hours capacity should all AC power be lost. If load shedding were to be performed, the capacity could be stretched to 12 to 34 hours. The DC controlled valves fail as-is. Mr. Ray asked whether spare inverters are kept on hand.

FEEDBACK OF OPERATING EXPERIENCE

W. Strom (SCE) discussed mechanisms for feedback of operating experience. This will be accomplished through the NSG and the ISEG. The NSG will follow INPO work, NRC circulars, LERs, and other related information. There will be coordination between the review of this information and the training program. Mr. Bender urged SCE to continue their efforts to further aid the operator in accident diagnosis and response.

POST ACCIDENT DEPRESSURIZATION

R. Turk (CE) discussed this subject. There is a reactor vessel vent installed, but no PORV. The plant is not designed to accommodate feed and bleed.

DESIGN TO PREVENT WATER HAMMER

R. Turk summarized design features to prevent water hammer. The feedwater line near the steam generator is at an angle. The feed ring employs J-tubes. This design is in other CE plants and has not suffered from water hammer.

SYMPTOMATIC ANALYSIS OF ACCIDENTS

V. Fisher (SCE) summarized the manner in which emergency procedures are provided to the operator. There is no computer diagnostic assistance. The procedures, however, are presented in logic patterns keyed to observable symptoms.

APPLICATION OF NUREG-0660 TRANSIENTS AND ACCIDENTS

R. Daleas (CE) and R. Turk indicated whether there are unique features of the San Onofre design that might influence accident sequences. There are no substantive differences between San Onofre and other CE or Westinghouse plants, it was said.

INDUSTRIAL SECURITY

K. Hadley (SCE) summarized industrial security at the site. The size and qualifications of the guard force, and their duties, were described. Features to ensure separation of Units 2 and 3 following startup of Unit 2 were summarized.

NOTE: ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE NRC PUBLIC DOCUMENT ROOM, 1717 H STREET, N.W., WASHINGTON, D.C. 20555 OR AT COST FROM ALDERSON REPORTING COMPANY, INC., 400 VIRGINIA AVENUE, S.W., WASHINGTON, DC 20024

LIST OF DOCUMENTS

1. Safety Evaluation Report related to the operation of San Onofre, Units 2 and 3, Supplement 1.
2. San Onofre Staffing and Schedule - 3 slides
3. Management Evaluation - 9 slides
4. SCE Presentation - 122 slides