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MINUTES OF THE ACRS
SUMMER PLANT OPERATING LICENSE REVIEW MEETING
MARCH 11, 1981
WASHINGTON, DC

On March 11, 1981 the ACRS Summer Plant Subcommittee held a meeting in Washington, D.C., to continue review of the application of the South Carolina Electric and Gas Company (SCE&G) for a license to operate the Virgil C. Summer Nuclear Plant. The principal attendees of the meeting are noted below:

ATTENDEES:

ACRS

D. Okrent, Chairman
J. Ray, Member
D. Ward, Member
M. White, Consultant
Z. Zudans, Consultant
P. Boehnert, Staff*

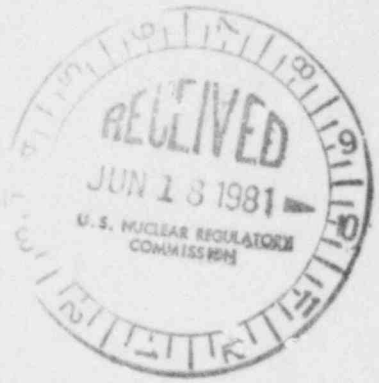
*Designated Federal Employee

NRC

W. Kane
A. Schwencer
J. Knight
F. Rosa
J. Shapaker

W

D. Goeser



SCE&G

C. Chen
M. Whitaker
R. Clary
D. Linksiek
C. Price
R. Whorton

INTRODUCTION

Dr. Okrent, Subcommittee Chairman convened the meeting at 8:30 a.m. The Chairman explained the purpose and the procedures for conducting the pointing out that Mr. Paul Boehnert was the Designated Federal Employee in attendance. Dr. Okrent turned the meeting over to representatives of South Carolina Electric and Gas Company to begin the day's presentations.

V. C. SUMMER SEISMIC DESIGN MARGIN - C. CHEN - SCE&G

Dr. C. Chen (SCE&G) discussed the seismic design margin for the Summer plant. Dr. Chen discussed the margins built into the design and the margins that are believed to exist as a result of engineering judgment.

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Overall the Applicant believes they have a total margin factor of from 2-3 in the 2.5 to 9.0 Hz frequency region. In response to questions from Dr. Okrent, Dr. Chen said they believe the equipment functionability margin is about a factor of two. Addressing the impact of near-field reservoir-induced earthquakes on the plant with magnitudes in the range of 4.5 -5.5, Dr. Chen said that the design spectra are exceeded slightly between 20-30 Hz. However, SCE&G said the quipment and piping systems affected at these frequencies can accommodate the additional loading.

NRC COMMENTS ON SUMMER SEISMIC DESIGN MARGIN - J, KNIGHT - NRC

Mr. J. Knight addressed several topics concerning the NRC review of the Summer seismic design. He said NRC believes there are large design margins in plant systems and components; however he also said that a near-field magnitude 5.5 earthquake would be a rigorous exercise for the plant. He also said that it is necessary to develop good operating and maintenance procedures to assure the seismic margin existing at plant start-up is not degraded with time.

Addressing the likelihood of small break LOCA or valve failures endangering the plant in the event of a near-field M_L 5.5 event, Mr. Knight said that he believes this likelihood is small.

In regard to the SSMRP program and whether it provided any insights for evaluation of the Summer design, Mr. Knight felt that it had been helpful - Drs. Okrent and Zudans however disagreed that NRR had made any use of the SSMRP results to date. Mr. Knight also said that additional information on equipment fragility and insight as to what plant systems are most vulnerable would greatly aid NRC review of seismic margins.

Dr. R. Jackson (NRC Geosciences) said he would attempt to provide an estimate of the probability of exceeding an M_L 5.5 near-field earthquake at the site for the Friday, March 13th Committee discussion of Summer.

SCE&G RESPONSE TO J. RAY'S QUESTIONS ON AC POWER SYSTEM RELIABILITY

During discussion of SCE&G's responses to J. Ray's questions on the AC power system reliability, SCE&G said they would research further the blackstart capabilities of their pump storage plants located at Fairfield and Parr, South Carolina.

NRC also said that the Summer DC system has a higher reliability than the reference DC system specified in NUREG-0666 "A Probabilistic Safety Analysis of DC Power Supply Requirements in Nuclear Power Plants".

ACRS CONSULTANTS COMMENTS ON SUMMER SEISMIC DESIGN MARGIN

At Dr. Okrent's request, Drs. White and Zudans expressed their views on the SCE&G anlaysis of the Summer plant seismic design margins. Except for minor details, both consultants pronounced the work satisfactory.

NRC COMMENTS ON SCE&G ORGANIZATION AND MANAGEMENT - D. VASSALO

The NRC reviewed their audit of the SCE&G Organization and Management. The principal concern of the Staff is the current lack of nuclear expertise on the corporate level. The Applicant has contracted for startup and training expertise until the desired experience can be built up in-house. Dr. Okrent requested that the NRC provide a more definitive explanation of the SCE&G needs in this area and how these needs will be met in a timely fashion for the full Committee Meeting on March 13.

NRC RESPONSE TO D. OKRENT'S QUESTIONS RELATING TO SUMMER VESSEL INTEGRITY - W. HAZELTON (NRC)

Mr. Warren Hazelton discussed questions relating to the Summer reactor vessel integrity from the standpoint of flaw detection and irradiation embrittlement. He said the copper content is low in this vessel and noted that a new regulatory guide about to be issued should provide more accurate in-service inspection results. Mr. Hazelton also said the Summer vessel saw a special inspection procedure during fabrication that gives added assurance regarding the likelihood of the existance of serious flaws.

IMPLEMENTATION OF TMI REQUIREMENTS - C. PRICE (SCE&G)

Mr. Carl Price (SCE&G) discussed their efforts regarding implementation of the TMI requirements. The Applicant stated that they will complete the TMI upgrade in a timely fashion. The NRC said they do not see any problems with implementation, and plant operation should not be delayed as a result of this item.

CONTROL ROOM INSTRUMENTATION RELIABILITY - C. PRICE

Mr. Price discussed the reliability of the control room instrumentation

from the standpoint of the Crystal River and Davis Bessie incidents and how the Summper plant was resistent to such events. In response to Subcommittee questions, Mr. Price said that operator procedures will identify which control room instruments are post-accident qualified so emphasis is put on the "believability" of these particular instruments. In response to a Subcommittee question, SCE&G said they plan to eventually computerize all plant operating procedures.

HYDROGEN CONTROL - J. SHAPAKER (NRC)

Mr. Shapaker (NRC) discussed hydrogen control for Summer in light of the proposed NRC Rule on this topic. He said the Summer containment is calculated to see 77 psig for an adiabatic burn of 1260 lbs. of H_2 (75% metal-water reaction). Dr. Okrent asked why Summer-type plants calculate releases based on 75% metal-water reaction instead of 100%, and how this impacts vital equipment survivability questions. NRC said that the NTCP plants have been considering 100% metal water reaction rates so as to not forclose containment design options in this regard. Dr. Okrent requested that at the ACRS Meeting, NRC describe their position on vital equipment survilvability for a Summer-type plant vis-a-vis an ice condenser-type plant.

SCE&G COMMENTS ON NATIONAL RELIABILITY EVALUATION PROGRAM - M. WHITAKER

Mr. Mark Whitaker discussed the NRC NREP requirements as SCE&G percieves them at present. In NREP, event tree and fault tree analyses are to be used to assess the likelihood of hypothetical sequences leading to core melt. SCE&G believes that the NREP program will not be sufficiently underway to be of great use before the middle of 1983. Mr. Whitaker said that SCE&G would be interested in pursuing this program if it is developed.

PLANT INTERNAL FLOODING STUDIES - R. SHELDON - GILBERT ASSOCIATES

Mr. Sheldon discussed the vulnerability of the plant to internal flooding. Both by design (sumps, weirs, instrumentation, etc.), and analysis, SCE&G believes the plant's vital equipment is highly resistant to flooding threats. In reponse to a question from Dr. Okrent, NRC concurred in this regard.

SERVICE WATER PUMPHOUSE AND INTAKE STRUCTURE SETTLEMENT - R. WHORTON - SCE&G

Mr. R. Whorton (SCE&G) discussed the problem of excessive settlement of the pumphouse and service water intake structure (SWIS). This settlement resulted in cracking of the SWIS. These cracks (largest seen - 1/8 inch) were grouted prior to filling of the reservoir. The Applicant believes settlement is complete, however, NRC has not yet completed review of additional information obtained on the stability of the subsurface materials and foundations of the pumphouse and SWIS.

STUDIES OF FILTER-VENTED CONTAINMENT SYSTEMS - D. GOESER - WESTINGHOUSE

Mr. Goeser (W) discussed considerations associated with use of filtered-vented containment systems. He said that the risks associated with use of the system must be carefully considered. He also stated that evaluation of FVCS and other preventive and mitigative features for Summer should proceed after the degraded core rulemaking is complete.

SUBCOMMITTEE CAUCUS

The Subcommittee caucused and recommended the Summer plant application be brought to the full Committee for review. Prior to adjournment, Dr. Okrent instructed the Applicant as to specific discussion topics for the full Committee meeting.

The meeting was adjourned at 5:20 p.m.

Note: Additional meeting details can be obtained from a transcript of the meeting located in the Public Document Room, at 1717 H Street, N.W., Washington, D.C., or can be obtained at cost from Alderson Reporting Company, Inc., 400 Virginia Avenue, S.W., Washington, D.C. 20024.