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Files (Docket No. 50-263)
THRU: D. L. Ziemann, Chief, ORB #2, L
D. L. Ziemann

SAFETY REVIEW OF MONTICELLO FULL-TERM OPERATING LICENSE - SECOND ACRS SUBCOMMITTEE MEETING

Representatives of Northern States Power Company (NSP) and of the Directorate of Licensing (see Attachment 1) met in Washington, D. C., on September 30, 1972, with ACRS Subcommittee members Mr. H. Etherington (Chairman), Dr. H. Isbin, and Professor W. Kerr to review the Monticello Nuclear Generating Station Unit No. 1 in consideration of issuing a full-term operating license (FTOL) for the facility. AEC staff met with the ACRS Subcommittee for approximately 2 hours prior to the meeting with NSP to review in detail selected items of the AEC Safety Evaluation Report for the Monticello FTOL. Copies of the 4 separate petitions for leave to intervene, all received within the last three days, were provided to each of the subcommittee members.

Dr. Isbin noted that a draft copy of a report prepared by the Directorate of Regulatory Operations, "Evaluation of Incidents of Primary Coolant Release from Operating Reactors", has been made available to the intervenors and suggested that NSP comments on the draft be solicited. He was advised by the Licensing staff that the report is a draft undergoing review by regulatory management and a decision regarding its release is not yet available.

Dr. Isbin referred to Neil Thompson's paper delivered at the recent Air Cleaning Conference and asked if we have reviewed it. He was informed that we were familiar with the contents.

Dr. Isbin requested clarification of the infant dose values discussed on page 6 of our Safety Evaluation. He was advised that the calculations for the Final Environmental Statement, from which the numbers in our report were taken, have been revised; therefore, this portion of our Safety Evaluation will be revised before it is released to the public.

The staff review of the Backfit Supplement to Safety Guide No. 11 was discussed emphasizing that additional flow restrictors and check valve position indicators in the 60 instrument line containment penetrations connected to the core coolant system are not required because open ended failure of one of the lines without closure of the check valve or isolation valve does not result in excessive releases of radioactivity in relation to 10 CFR 100 limits.

The Subcommittee noted that the depleted fuel shipping cask must be lowered 150 feet for transportation to offsite facilities for fuel recovery and asked for details of this operation. We replied that we did not review fuel handling accidents in our current evaluation because we were not aware of any new concern that had arisen in this area since the AEC Safety Evaluation for the POL was issued in March 1970. We agreed to look into the subject and to advise the Subcommittee of our findings.

The meeting with NSP was opened with remarks by W. W. Larkin, Vice President of NSP, who declared that NSP is dedicated to protecting the health and safety of the public while providing reliable electric power for the customers. The meeting proceeded according to the agenda (Attachment 2) previously agreed upon by the ACRS Subcommittee and NSP.

Zero release of liquid effluents for the past six months, as reported in the January - June 1972 semiannual report by NSP and in oral discussion during the meeting, led to questions relative to the tritium buildup in primary coolant. NSP representatives stated that during this period of time when no radioactive liquid was released into the Mississippi River, it was necessary to add 20 - 30,000 gallons of makeup water per month. NSP indicated that this amount of water is lost in the evaporative process and will limit the tritium concentration in the primary coolant to levels well below the tritium concentrations observed in PWRs, although they (NSP) have not projected to the future or attempted to observe the tritium buildup in the coolant as the effects of zero release of liquid effluents become more evident. It also was admitted by NSP that the new gaseous waste cleanup system to be placed in operation early in 1973 could significantly reduce the evaporative release route for tritium, assuming that zero release of liquid effluents is maintained and that, in time, the tritium concentration could be of some concern but not at the same level as PWRs because of the lower rate of producing tritiun in BWRs.

The Subcommittee commented that the 0.75 Ci/yr iodine release is excessive since it results in 67 mR thyroid dose to a child due to milk ingestion. NSP replied that a release of this magnitude would require continuous steam leaks in the turbine building in excess of 2400 lbs/hr, a value that they believe is excessive. (2400 lbs/hr corresponds to 57,500 lbs/day, 1.73×10^6 lbs/mo or 210,000 gals/mo . . . our observation that 210,000 gals/mo is far in excess of the evaporative losses that, as NSP noted earlier, have been measured over the last 6-month period with zero liquid effluent release - this rationale was not part of the dialogue between the Subcommittee and NSP)

The Subcommittee was informed by the GE representative that one second closure of all MSIVs will result in a 37 psi pressure peak, a value that is 54 psi below the overpressure setting of the first safety valve. The transient does not cause heat flux to exceed 100%. The turbine stop valves, however, can close fast enough to cause heat flux in excess of 100% because the reactivity insertion due to pressurization exceeds the negative reactivity due to reactor scram.

Discussion of containment pressurization incidents revealed that pressure switches have been added to the safety valves to more accurately determine which valves open in containment pressurization incidents. Steam lines are to be instrumented to measure vibration and record events that may activate overpressure safety valves. This program is a followup to incidents that have already occurred and will enable a more accurate determination of the cause of premature safety valve actuation, delayed operation of relief valves, or valves that stick open.

Meteorology tower effectiveness during emergencies is being reevaluated. The height of towers may be increased from 140 ft to the height of the off-gas stack (~300 feet).

It was noted that the Prairie Island Nuclear Power plant will monitor for primary system cracks using acoustic triangulation. Verification that the vent line vacuum breakers are closed and also containment inerting in relation to post-accident hydrogen generation due to radiolysis was discussed briefly. The Subcommittee restated their belief that leak detection and location equipment can be improved.

After a caucus, the Subcommittee Chairman announced that he would recommend a full ACRS committee review of the NSP application for a FTOL, but he stated that the date for such a meeting was not certain. The licensee was advised that he need not prepare formal presentations on any subjects for the full Committee meeting; however, it was noted that the ACRS may have questions in all the areas reviewed by the Subcommittee, but very likely on the following topics:

ECCS

State responsibility for emergency procedures

Coolant leakage

Post-accident hydrogen control

The written material assembled for the ACRS Subcommittee meeting was distributed as a visual aid prior to the meeting and is available for reference in the project work file.

James J. Shea
Operating Reactors Branch #2
Directorate of Licensing

Enclosures:
1. List of attendees
2. Agenda

cc w/encls:
A. Giambusso, L:RP
M. Rosen, L:RP
D. J. Skovholt, L:OR
T. J. Carter, L:OR
D. L. Ziemann, L:ORB #2
J. J. Shea, L:ORB #2
R. M. Diggs, L:ORB #2
J. Gallo, OGC
PDR
Local PDR

ATTACHMENT 1

Attendees - ACRS Subcommittee meeting on September 30, 1972

Northern States Power Company

Elmont Charles Ward
Leon Roy Eliason
Dwayne Glenn Fitzgerald
Marion John Robinson
Marcus Henry Voth
Morgan Henry Clarity
Gerald Hugo Neils
Charles Edward Larson
Martin Francis Dinville
Gordon Herbert Jacobson
Douglas Dean Antony
Willard Enos Anderson
James Robert Pasch
Melford Thomas Opstad
Jay Eliott Silberg
Wade Wadsworth Larkin
Peter Dean Arrowsmith

GE - San Jose

John Lannean Benson
Lowell Herman Frauenholz

ATTACHMENT 2

AGENDA

MONTICELLO ACRS SUBCOMMITTEE MEETING (second day)
"H" Street Offices - Saturday, September 30

10:30 AM Convene - 5:00 PM Caucus - 5:30 PM Adjourn

1. Management report of Monticello operations - Wade Larkin
2. Monticello's ability to comply with State requirements - Wade Larkin
3. Operating experience at Monticello - Chuck Larson
4. Operating experience at other BWR's that will be applicable to Monticello - Morgan Clarity and Gerry Neils
5. Expected performance of improved radwaste system compared to proposed Appendix I - Mel Opstad
6. Main steam line isolation valve system - Chuck Larson and Marc Voth
7. Instrumentation and control systems performance - Chuck Larson and Gordy Jacobson
8. Provision to follow the course of an accident - Chuck Larson and Leon Eliason
9. Emergency plans and State participation - Al Ward and Leon Eliason
10. In-service inspection results - Gerry Neils
11. Continuing Q.A. program and specific methods for routine maintenance - Gerry Neil
12. Leak detection effectiveness - Chuck Larson and Jim Pasch
13. Protection against turbine generated missiles - Jack Benson
14. Vibration and loose parts monitoring - Gerry Neils
15. Compliance with AEC Safety Guide - Duane Fitzgerald and Marc Voth
16. Pipe whip protection - Jack Benson
17. Anticipated transients without scram - Marc Voth
18. Instrumentation to detect fuel failures - Gerry Neils & Leon Eliason
19. ECCS evaluation and observe performance - Marc Voth
20. Calculated consequences of a rod drop accident - Marc Voth and Jack Benson
21. Discussion items

MONTICELLO ACRS SUBCOMMITTEE MEETING

September 30, 1972

Applicant Attendees

W W Larkin, Group Vice President - Power Supply
E C (Al) Ward, Director, Engineering Vice Presidential Staff
Gerry Neils, General Superintendent - Nuclear Power Plant Operation
Chuck Larson, Monticello Plant Manager
Morgan Clarity, Superintendent - Monticello Plant Engineering & Radiation Protection
Leon Eliason, Monticello Radiation Protection Engineer
Marty Dinville, Monticello Plant Engineer - Operations
Gordy Jacobson, Plant Engineer - Technical
Doug Antony, Engineer - Operations
Willard Anderson, Plant Superintendent - Operations & Maintenance
Jim Pasch, Engineer - Operations
Marc Voth, Administrator - Nuclear Support Services
Mel Opstad, Nuclear Engineer

LEGAL COUNSEL

Jay Silberg, Shaw, Pittman, Potts, Trowbridge & Madden

GENERAL ELECTRIC

Jack Benson, Manager of Safety and Licensing Operational Plants
Fritz Frauenholz, Specialist - Safety and Licensing

CONSULTANTS

Dr Duane Fitzgerald, Senior Staff Consultant - NUS Corporation
Dr John Robinson, Nuclear Engineering - Black & Veatch
Pete Arrowsmith, President - Suntac Nuclear Corporation