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SUMMARY/MINUTES OF THE ACRS SUBCOMMITTEE MEETING
ON TVA ORGANIZATIONAL ISSUES
NOVEMBER 4, 1987
WASHINGTON, D.C.

The ACRS Subcommittee on TVA Organizational Issues met on November 4, 1987 at 1717 H Street. NW., Washington, D.C. The purpose of this meeting was (1) to review the safety implications of TVA's management reorganization (2) to review TVA's and NRC's actions on the recommendations made in the ACRS's August 12, 1986 report on TVA, and (3) to be briefed on the actions being taken on the Sequoyah restart issues. The Subcommittee met with representatives of the NRC Office of Special Projects Staff and representatives of TVA. The Subcommittee discussions began at 8:30 a.m. and were concluded at about 7:00 p.m. All of the discussions were held in open session.

The principle attendees at this meeting were:

ACRS

C. Wylie, Subcommittee Chairman
C. Michelson, Member
D. Ward, Member
J. C. Ebersole, Member
G. Reed, Members
R. Savio, ACRS Staff
P. Barton, ACRS Consultant
H. Hagedorn, ACRS Consultant

NRC

S. Ebneter, NRC - OPS
J. Clifford, NRC - OPS
S. Richardson, NRC - OPS
[illegible] - OPS

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E. Marinos, NRC - OPS
B. Liaw, NRC - OPS
G. Zech, NRC - OPS
F. Goodwin, NRC - OPS

TVA

R. Gridley
Mr. Harding
T. Jenkins
M. Burznski
R. Cantrell
F. Campell
M. Blackburn
W. Hannum
J. Ziegler

Highlights

1. Mr. Ebneter of the NRC Staff presented a brief summary of the NRC Staff actions an the review of TVA management reorganization and the Sequoyah restart issues. The NRC review is being carried out by the TVA Projects Division of the NRC's Office of Special Projects (OSP). (The organization chart is shown on Figure 1 of Attachment A). A NRC Staff SER on the management reorganization was issued in July, 1987. The NRC Staff has completed a Independent Design Inspection (IDI) of the Essential Raw Cooling Water Systems (ERCWS) and has reported on the currently outstanding Sequoyah IDI restart issues in a letter report dated October 9, 1987 Restart of Sequoyah Unit 2 is not expected to take place any earlier than March, 1988. Restart of Sequoyah Unit 1 is expected to be possible about 6 months after the Unit 2 restart. The current restart/startup schedules for the other TVA reactors are shown on Figure 2. The major issues to be resolved before the Sequoyah Unit 2 restart are the design of the pipe supports, testing of the silicone rubber insulated cables, and the IDI restart issues. A listing and summary status of the Sequoyah Unit

2 restart issues is given on Figure 3. The principle IDI issues are listed on Figure 4.

2. There was a lengthly discussion on the assessment of electrical cable integrity at the Sequoyah plant. The issue of cable integrity arose because of Employee Concerns allegations as to the mishandling of and improper installation of electrical cables. The specific concerns were cable damage during installation and excessive vertical drop of some cables installed inside of conduits. The NRC initially proposed testing at 320 volts/mil of installation (i.e, the factory proof test) but later agreed to TVA's proposal of 240 volts/mill of installation. (The 240 volts/mill test had been used at Grand Gulf without damage to cable installation and is based on environmental qualification test procedures). TVA subsequently conducted tests on 16 single conductor cables with a nominal 45 mils of installation at 240 volts/mil. This cable was all of a silicone rubber type and was thought to be the most susceptible to handling and installation damage. The cable is rated at 600 volts AC and is used in a 125 volts AC voltage application. Test voltage at 240 volts/mill was 10,800 volts. There were 4 failures in the 16 sample tests at test voltages between 5000 volts and 10,000 volts. Other (non-silicone rubber) cable types were tested and did not fail at the 240 volts/mil level. The silicone rubber insulation used in the Sequoyah tests was soft and appeared to be unusually susceptible to handling and installation damage. TVA is proposing that the cables be tested at a lower voltage based on the minimum insulation

thickness necessary to survive qualification testing. (This may be as low as several mils of installation). The OSP Staff is prepared to review any TVA proposal but appeared to be inclined to recommend replacement of the silicone rubber insulated cable with a tougher type. This issue is likely to be discussed again by the Subcommittee in the near future.

3. The TVA management reorganization was discussed. TVA had established a separate organization for nuclear construction and operations in early 1986. The current organization chart is shown on Figure 5. Initially a significant number of contract managers were used to staff senior management positions. An effort has been made to convert or to replace these individuals with TVA employees and the number of contractor managers has been significantly reduced. A listing of the current senior manager hired since January, 1986 is given on Figures 6 through 10. The Subcommittee and the NRC Staff agreed that very significant improvements had been made in TVA's management structure and organization. There was, however, some Subcommittee concerns as to the span of control in Mr. White's line management organization. Mr. Ward and Mr. Hagedorn stated that they did not believe that the NRC Staff had made enough progress in developing the NRC's capability to judge the effectiveness of a nuclear utility's management. This topic will be discussed again in the near future and it is likely that a ACRS position will be developed.

4. The Employee Concerns program has been established and is now established with regular TVA employees (as contrasted to contractors). Employee confidence appears to be increasing and the number of complaints is increasing. Both TVA and the NRC Staff believes that the issue is resolved. The process that was developed to resolve the "pre-reorganization" backlog of employee complaints is continuing.

5. Mr. Hermann of the OSP staff described the NRC Staff's IDI of the Sequoyah Essential Raw Cooler Water System (ERCWS). The inspection was performed by a team of 14 people with expertise in the appropriate engineering discplines. The purpose of the IDI was to audit the effectiveness of TVA's "get well" programs by looking at a single system (the ERCWS) in great detail. The ERCWS was chosen because it was a AE system (TVA) and because the design and construction practices used were believed to be representative of what was used throughout the plant. The IDI activities are summarized on Figures 11 and 12 and the IDI team members are listed on Figure 13. Significant issues were identified and are currently being discussed with TVA. A listing of the same issues is given on Figures 14 through 17. A complete summary and discussion is given in the NRC Staff's October 9, 1987 letter report.

6. TVA management selection and development programs were discussed. It appears that TVA has made improvement in this area and is currently involved in a comprehensive training of nuclear supervisors and managers.

7. Dr. Hannum discussed TVA's Nuclear Safety Review Board (NSRB) and its role as TVA's safety conscience. Separate Boards have been established for the Sequoyah, Browns Perry, and Watts Bar plants. All of the Boards are chaired by Dr. Hannum. The personnel serving on these Boards are listed on Figures 18 through 20. Dr. Hannum is a TVA employee and reports directly to Mr. White. Dr. Hannum believes that the NSRB is functioning effectively and can identify and resolve TVA nuclear safety issues. The Subcommittee showed considerable interest in the functioning of the NSRB and will continue to be kept informed as to its activities. The NSRB charter and listing of the qualifications of the members are Attachment B of these minutes.

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NOTE: A transcript of the meeting is available in the NRC Public Document Room, 1717 Street, NW, Washington, D.C. or can be purchased from Heritage Reporting Corporation, 1220 L Street, NW., Washington, D.C. 20005, Telephone: (202) 628-4888. All documents listed in Attachment D are available in the ACRS files.