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Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Zech:

SUBJECT: ACRS REPORT ON THE TENNESSEE VALLEY AUTHORITY'S MANAGEMENT
REORGANIZATION AND SHUTDOWN OF TVA'S NUCLEAR POWER PLANTS

During its 315th meeting, July 10-12, 1986, the Advisory Committee on Reactor Safeguards met with representatives of the NRC Staff and Tennessee Valley Authority (TVA) and reviewed the issues related to reorganization of TVA's management structure and the shutdown of TVA's nuclear power plants. This matter was also discussed during the 316th ACRS meeting, August 7-9, 1986. In this review, we had the benefit of a subcommittee meeting on June 12-13, 1986 and a visit to the Sequoyah Nuclear Plant on June 13, 1986. In addition, we had the benefit of advice from two management consultants.

As a result of our discussions with the NRC Staff and TVA, it is our opinion that the immediate technical and management issues are being addressed and resolved. We agree with TVA's diagnosis that the root cause of their problems was the lack of effective top management who could provide leadership and proper direction for TVA's nuclear activities. There were a number of contributing factors which evolved over many years that ultimately created this problem, and it would not be surprising if corrective actions take many years to completely resolve this problem. We believe that the Commission should give this matter continuing attention.

In our discussions with TVA and the NRC Staff, we identified several issues that we believe must be dealt with if TVA's problems are to be corrected and their recurrence prevented. Our comments are as follows:

1. We were unable to identify the existence of an adequately structured development program at TVA to assure that managers are prepared to handle the special problems associated with nuclear power plants and to provide for successful and systematic career development. TVA's Corporate Nuclear Performance Plan (Reference 1) does not describe or express an intent to develop such a plan. TVA has taken some steps recently toward providing management development on an ad hoc basis and has for some time had training courses which could be used. We generally agree that the measures taken by TVA with a temporary management team can satisfy their immediate needs while the contract managers are employed at TVA. However, we believe that a forward-looking, longer range, structured management development program needs to be established if TVA is to meet its future needs. The NRC Staff appears to share our concerns.
2. In the present organization, the Manager of Nuclear Power has 25 individuals reporting directly to him. This is clearly a large span of control and, if taken at face value, would be a serious deficiency in

the organizational plan in the long term.

From our discussions with the TVA staff, it became apparent that there are shadow responsibilities among these organizational units. Some of the managers will actually report on most matters to the Manager of Nuclear Power through certain other managers. However, these lines of responsibility are not displayed in the organizational plan. We cannot tell whether they are clear to the managers involved. This arrangement may well be useful in the initial restructuring of the organization but will, in our opinion, need to be clarified if it is not changed in the process of transferring TVA's operations from the contract managers to permanent TVA employees. We recommend this matter to the Commission for their attention.

3. It is not clear where the focal point for nuclear safety resides within the TVA corporate management structure. The word "Safety" appears in several parts of the organization but the functional assignment seems fragmented with no clear assignment of responsibility. Although we agree that safety is everybody's business, we believe that a more focused approach is needed. It is not clear who has the responsibility for being the corporate nuclear "safety conscience" within the TVA higher management structure.

The former Nuclear Safety Review Staff appeared to have this mission at the TVA board level but did not perform it effectively. As a result, the organizational arrangement was discredited and the function has been absorbed by the Manager of Nuclear Power as a management review function. We believe that TVA should reestablish credibility with regard to safety cognizance. The safety oversight process should be focused at a top management level. Such a measure may not be warranted for all licensees. TVA is, however, an unusual case and calls for unusual measures.

It is, in addition, not clear where the "safety conscience" of each site organization resides. The engineering groups seem to remain oriented toward design. The Independent Safety Evaluation Group (ISEG), while ostensibly filling the function of safety conscience, appears only to provide safety-oriented services. The group which is to play a key role in safety-related decisions and evaluations needs to be identified.

4. TVA's compensation program for top level nuclear managers is not competitive with the rest of the nuclear industry. This problem was recognized by the President's Private Sector Survey on Cost Control, frequently referred to as the Grace Commission Report (see Reference 2), which recommended that corrections be made immediately in order to hold together the nuclear program management team at TVA. TVA is, as recent experience shows, not able to compete in hiring in the market place except under special temporary contract arrangements. Until the statutory limitation is changed to permit TVA to pay salaries competitive with the industry, it will be difficult, even with development programs, to meet TVA's needs for experienced top level nuclear managers. We recommend that the Commission give attention to this matter.
5. TVA does not use modern personnel selection techniques like those used in other segments of the nuclear utility industry and many successful corporations. We recommend that TVA review the use of personnel selection methods and utilize the most effective aptitude testing avail-

able to them for personnel selection, transfer, and promotion.

6. The NRC Staff is currently confronting the difficult task of reviewing a large organization with complex and long-standing organizational problems, and judging if adequate reorganizational steps have been taken. The NRC Staff in the past has been oriented to hardware rather than management problems and perhaps has not given enough attention to developing a capability to perform management reviews. We believe that improving the management of activities related to nuclear power plants continues to be one of the most effective means for improving the safety of operation. We recommend that the Commission give high priority to developing NRC capability for conducting management reviews. Emphasis should be placed on identifying management problems before they lead to difficulties on the scale encountered at TVA.
7. In our discussions with TVA and the NRC Staff, we attempted to gain some perspective on problems associated with the restart of the TVA plants. The items delaying the restart of Sequoyah appear to be resolvable in the near future. Little was presented during these discussions concerning the additional work required to prepare Browns Ferry for restart or for licensing of Watts Bar. A concerted effort should be applied by the TVA and NRC organizations to complete the necessary documentation and review of safety questions for Sequoyah and return those units to power at the earliest date that nuclear safety can be assured. Restoring power operation at Sequoyah should significantly improve the morale of the entire TVA nuclear organization and restore confidence in present management. We believe that high morale of nuclear plant operating personnel is another of the most important ingredients for plant safety.

Additional comments by ACRS Members Glenn A. Reed and David A. Ward are presented below.

Sincerely,

David A. Ward
Chairman

Additional Comments by ACRS Member Glenn A. Reed

Although I agree generally with the conclusions and recommendations of this ACRS letter, I am concerned that the ACRS has stepped out of its regular fields of expertise into the utility management field where it does not have a wealth of experience. The use of consultants by the ACRS was appropriate to the effort; but, even so, more in-house experience to evaluate the consultants' input could have been important to final judgments.

Consistent with my concern about the ACRS experience and training to review and recommend on management issues, I disagree with the ACRS recommendation to have the NRC Staff strive to develop expertise to evaluate nuclear utility management. I consider better and more timely abilities already lie with or can be acquired by INPO. INPO has been addressing this issue for some time. Governmental agencies are not noted for their ability to lead the way by exemplary management structure and performance, and I doubt that even many

years of training and development of NRC personnel would bring the regulatory organization into a sound position to render advice and direction. In my opinion, the technically based NRC organization should continue to concentrate on performance indicators, and from these draw conclusions that there are or are not management problems needing correction, and then leave the direction of the corrections to industry.

In this regard, I consider that the NRC regulatory organization (Commissioners, headquarters staff, and regional staff) did a respectable job in focusing attention upon TVA performance problems in its nuclear operations. I consider that, in spite of much criticism to the contrary, the NRC did move on a reasonably respectable schedule to indict and curtail TVA construction and operations activities.

Additional Comments by ACRS Member David A. Ward

Some of the problems experienced in the operation of TVA's nuclear plants have been attributed to the past dominance within TVA of the "architect-engineer" perspective over the "operations" perspective. The reorganizational approach and many of the temporary managers appear to be influenced by this same "architect-engineer" tradition. I have some concern about whether the "operations" point of view will be given an adequate voice in the new organization.

References:

1. Tennessee Valley Authority, Revised Corporate "Nuclear Performance Plan," dated March 1986
2. President's Private Sector Survey on Cost Control-Report on Boards/Commissions transmitted to Hon. Ronald Reagan from J. Peter Grace, Chairman, Executive Committee on September 15, 1983

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