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August 20, 1985
Fort St. Vrain
Unit No. 1
P-85293

Mr. W. D. Martin
Regional Administrator
Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Docket No. 50-267

SUBJECT: Fort St. Vrain Environmental Qualification Program

Dear Mr. Martin:

The NRC and PSC have had several meetings and a considerable exchange of information concerning the Fort St. Vrain Environmental Qualification (EQ) program beginning in late March of this year to the present time. As a result of this exchange of information, we are aggressively pursuing several activities related to our environmental qualification program. Given the technical issues that have recently been raised, PSC is working in the following areas with the objective of resolving these technical issues as soon as possible:

1. Aging and Operability Time Program

2. Four Minute Versus Ten Minute Operator Response Time

3. Temperature Profiles

4. Complete Review of Safe Shutdown Cooling Path(s) Including the Liner Cooling System

5. Complete Field Walkdown of EQ Safe Shutdown Cooling Equipment

6. Complete Review, Evaluation, and Update of All Environmental Qualification Files

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This has developed into a massive work effort with all tasks being conducted in parallel. Completion of task evaluations in one area are necessarily highly dependent upon the results of the other areas. Given all these activities, PSC is identifying what appear to be concerns in some of the areas being evaluated. PSC has not progressed far enough in all areas to permit a complete evaluation, but PSC feels it is important to keep the NRC abreast of our findings, activities and progress.

Aging and Operability

As we previously committed to you, we are continuing with the aging and operability studies. Due to limited information available on materials for Fort St. Vrain's unique temperature profiles, we have identified some areas of concern. On this basis, we have expanded our efforts in order to establish the necessary materials data base to bring these studies to a conclusion. Our aging studies are identifying potential concerns with some equipment items. The potential concerns are being re-evaluated on the basis of all program information. Corrective action is under consideration and will be scheduled and prioritized by late August or early September. Although we have experienced some setbacks due to lack of industry data bank information, we are still proceeding on a path to complete the basic aging studies by the end of August. We would plan to get with the NRC as soon thereafter as we can complete our review and evaluation of this work.

Four Minute vs Ten Minute Operator Response

We are continuing our work on a steam leak detection system. Based on NRC's comments at our recent site meeting (July 30, 1985), we are evaluating an automatic steam leak detection/isolation system. We are proceeding with the design work of this system with the full intent of installing the system on an expedited schedule should the system prove to be feasible as well as acceptable to the NRC. We are also re-evaluating the previous steam leak scenarios that were presented to the NRC in our letter dated March 28, 1985 (P-85112) in order to identify all automatic actions that will take place to mitigate the consequences of a high energy line break and to better define operator action required as a result of these automatic actions (full credit was not taken in our previous scenarios for control system and plant protective system actions and automatic valve closures that would result in terminating many of the leak paths). Preliminary results indicate that 7 of the 10 steam line break scenarios would result in automatic isolation and in the remaining 3 cases only one operator action is required to terminate the leak. Completion of this study will permit better interim operator training in response to some concerns raised by the NRC at the July 30, 1985 site meeting. This study should be complete by the end of August.

Temperature Profiles

We believe our temperature profiles are somewhat conservative and we are proceeding to re-evaluate these profiles on two different bases.

First, we are utilizing the codes that were used originally for generating the profiles. Some refinements to the code have been made to account for other external effects. The objective of this effort is to define profile conservatism as well as provide additional information needed as input for the steam leak detection system design, aging, operability time analysis and system access studies. Information from this effort should be available to us by the end of August 1985. Preliminary scoping studies in this area indicate that the harsh environment could result in equipment access problems.

As a second effort we are developing temperature profiles utilizing a completely different model and code. The primary objective of this second effort is to determine conservatism (if any) in the existing temperature profiles as well as obtain additional information concerning the steam leak and the resulting harsh environments. The output from this additional effort will also be utilized for design input to the steam leak detection/isolation system. We are actively pursuing this effort in order to complete the input to the model by the end of August. This schedule will permit a preliminary scoping run of the temperature profiles by mid-September.

Review Safe Shutdown Cooling Path(s)

We have initiated a complete review of the Safe Shutdown Cooling Path(s) which will include a review of the various assumptions that have been made in the past. Preliminary results of this review have identified some apparent qualification concerns with the similarity arguments utilized to qualify equipment, assumptions concerning equipment locations and harsh environments, and possible discrepancies in the safe shutdown cooling equipment list. In addition, we have identified four (4) valves that have a potential to be submerged. These valves are presently being evaluated. Corrective action will be implemented as soon as possible.

The results of this review will be evaluated in conjunction with all of the other activities and studies, and corrective action will be implemented as soon as possible.

Field Walkdown

As a part of our overall effort of addressing the various technical issues we have initiated a complete field walkdown of our safe shutdown cooling equipment. This work is still in progress and final evaluations have not been made, however, we feel it is important to apprise you of the typical problem areas being identified. We have identified taped splices, (typical of pigtail connection required for motor and solenoid valve terminations) which are acceptable per Fort St. Vrain standards, but are questionable in terms of meeting qualification requirements. We are evaluating the replacement of taped splices and will be starting a replacement program as soon as possible. We have also identified some junction boxes that have interior rust or oil contamination. We are proceeding immediately to evaluate the effects of this contamination and are implementing a field maintenance effort to correct maintenance type items.

We have identified some discrepancies in installed equipment model numbers versus test reports. These discrepancies will require evaluation against the original test reports, similarity arguments, etc. to determine final resolution or corrective action. We will also be evaluating the installed equipment configuration against the test report data.

We expect completion of the field walkdown effort in early September. In the interim, we will be evaluating the results of the field walkdown efforts and developing an agressive but controlled program for corrective maintenance and modifications where necessary.

Review/Update Environmental Qualification Files

In preparation for incorporating the aging and operability time results into our program, as well as documenting any other changes or requirements that may result from the above listed activities, we have initiated a review to develop additional information and analyses for completion of our environmental files. A project group has been established to ensure timely completion of these files commensurate with the completion of the various other studies and evaluations outlined herein.

Other Activities

Other activities include a drawing review and complete circuit analyses including breaker/fuse coordination. In addition, we are reverifying equipment failure modes. We have completed the fuse and breaker coordination review referenced in our March 28, 1985 letter (P-85112) and have identified some valve circuits (2 breakers requiring set point changes, 1 circuit requiring rewire, 3 breakers requiring changeout and 5 valve breaker sections requiring additional fuse installation) within MCC's which do not meet our criteria. Design work to correct these areas is underway. It is anticipated that deficiencies can be corrected by mid-October.

NRC Generic Letter 85-15

We are in receipt of the August 6, 1985 Generic Letter, and we are evaluating the various aspects of the letter. While we are proceeding on a very aggressive basis to resolve any and all technical issues associated with our EQ program, it is obvious that we have had only a very short time to provide technical issue resolution for unique situations based on relatively recent guidance and feedback from the NRC. It appears that based on various issues before us, the installation of the steam leak detection/isolation system will be critical to final resolution of the EQ issues. While we are aggressively pursuing the design and installation of this system as well as pursuing resolution to all other technical issues, we will in all probability be filing on or before September 30, 1985 for an extension beyond November 30, 1985.

Interim Operation

In the interim, we are proceeding on the basis that the 15% power release approved by the NRC SER dated July 19, 1985, is still the controlling operational requirement on the bases that steam conditions and resulting pipe stresses at 15% power represent an acceptable operating condition

We are presently in a shutdown mode due to moisture levels in the primary coolant, but we intend to go to power operation not to exceed 15% as moisture conditions may permit.

We will keep you informed of our progress in the various areas outlined above. Again, we are making every effort possible to resolve any and all issues as they arise. If you have any questions please contact Mr. M. H. Holmes at (303) 571-8409.

Very truly yours,

D. W. Warembourg

D. W. Warembourg, Manager
Nuclear Engineering Division

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