



Nebraska Public Power District

Nebraska's Energy Leader

NLS990126
January 1, 2000

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Request for Enforcement Discretion and Supplement to Proposed License Amendment Request
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

- References:**
- 1) Letter NLS990050 to US Nuclear Regulatory Commission from John H. Swailes (Nebraska Public Power District), dated June 15, 1999, "Proposed License Amendment Service Water Backup to the Reactor Equipment Cooling Post LOCA".
 - 2) Teleconference between J. A. McDonald, et. al., (NPPD) and J. Zwolinski, et. al., (NRC) on December 30, 1999, Request for Enforcement Discretion.
 - 3) Teleconference between J. A. McDonald, et. al., (NPPD) and J. Zwolinski, et. al., (NRC) on January 1, 2000, Clarification of Request for Enforcement Discretion.
 - 4) Teleconference between J. Sumpter, et. al., (NPPD) and L. Burkhart, et. al., (NRC) on November 9, 1999, SW backup to REC Telephonic Request for Additional Information.

On June 15, 1999, the Nebraska Public Power District (District) requested a License Amendment to allow Service Water to serve as a backup to the Reactor Equipment Cooling (REC) System post Loss of Coolant Accident (LOCA) (Reference 1). During discussion with your staff (Reference 2), the Nebraska Public Power District (District) requested that the NRC exercise discretion in not enforcing the Required Action Completion Time requirements of Cooper Nuclear Station (CNS) Technical Specification (TS) Limiting Conditions of Operation (LCO) 3.7.3, "Reactor Equipment Cooling" (REC) until the NRC approves the proposed License Amendment. John Zwolinski (NRC) verbally approved this request for enforcement discretion at 2130 CST during the December 30, 1999 teleconference (Reference 2). Subsequently, the District clarified particular points relative to the Request for Enforcement Discretion (Reference 2) and the drawing contained in Reference 1 in a teleconference on January 1, 2000 (Reference 3). Attachment 1 documents the formal request for the Notice of

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Enforcement Discretion (NOED). NRC approval of the proposed License Amendment is contingent on the District providing additional information to address an NRC identified postulated single failure vulnerability associated with the Amendment request (Reference 4).

On December 30, 1999, an increase in the REC system leak rate was noticed. Accessible portions of the system were walked down with a minimal amount of leakage identified. At 1600, it was determined that leakage from the REC had increased to approximately 23 gallons per day. This was detected by a decrease in the REC surge tank level and a corresponding increase in the unidentified leakage as measured by calculated leak rates from Drywell sump (sump F) pumpdowns. This resulted in the REC system being declared inoperable. In accordance with CNS TS, CNS entered a TS Action which would require CNS to be in Mode 3 (Hot Shutdown) in 12 hours and Mode 4 (Cold Shutdown) in 36 hours. The District requested that the NRC exercise enforcement discretion to allow approval of the License Amendment, which allows Service Water to be credited as the backup supply to REC after at least 7 days following a Large Break LOCA. Granting this enforcement discretion would avoid undesirable transients as a result of forcing compliance with the TS and, thus, minimize potential safety consequences and operational risks.

Attachment 1 to this letter provides the description of the circumstances surrounding this issue, and an assessment of the safety and environmental significance in accordance with the guidance contained in NRC Inspection Manual, Part 9900: Technical Guidance, "Operations - Notices of Enforcement Discretion," issued June 29, 1999. The District has evaluated this situation and believes that this request meets the criteria outlined in Part 9900, in that this request is temporary, non-recurring, and consistent with protecting the public health and safety.

As discussed in the January 1, 2000 teleconference, the single failure vulnerability identified by the NRC (Reference 4) has been reviewed by the District and it has been determined that the existing REC system design will accommodate the postulated single failure. Attachment 2 provides a detailed explanation. Furthermore, the District can find no evidence of other scenarios which would lead to a similar phenomenon as that identified in the Reference 4 teleconference. Based on no additional single failure scenarios being identified (beyond the one included in Reference 1, Attachment 2, Section 5.6), the conclusions reached in the Significant Hazards Consideration Evaluation and Environmental Impact Evaluation of the proposed Amendment (Reference 1, Attachment 1) remain valid and the Evaluations need no modifications as a result of the information provided in Attachment 2 to this letter. Attachment 1 documents the District's position on issues discussed during the December 30, 1999 and January 1, 2000 teleconferences.

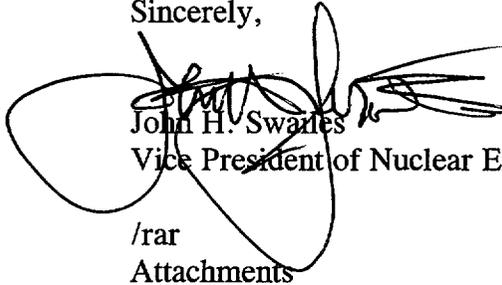
The District requests that the amendment request contained in Reference 1, as supplemented by this letter be issued on an exigent basis with an immediate effective date and implementation to take effect within 24 hours of receipt of the Amendment.

NLS990126

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Should you have any questions concerning this matter, please contact Sharon Mahler, Assistant Manager Nuclear Licensing and Safety at (402) 825-5236.

Sincerely,



John H. Swales
Vice President of Nuclear Energy

/rar
Attachments

cc: Regional Administrator w/attachments
USNRC - Region IV

Senior Project Manager w/attachments
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/attachments
USNRC

NPG Distribution w/o attachments

REQUEST FOR ENFORCEMENT DISCRETION FROM THE REQUIREMENTS
OF CNS TECHNICAL SPECIFICATION 3.7.3

I. INTRODUCTION

The District requests that the NRC exercise temporary enforcement discretion from the Required Action Completion Time requirements of Cooper Nuclear Station (CNS) Technical Specification Limiting Conditions of Operation (LCO) 3.7.3, "Reactor Equipment Cooling" (REC). This discretionary enforcement is requested until the NRC approves the previously submitted License Amendment that would allow the use of the Service Water (SW) system cross tie to provide cooling to the REC critical loops in a post Loss of Coolant Accident (LOCA) condition (Reference 1), and the District implements the Amendment. The District is requesting this enforcement discretion to avoid undesirable transients as a result of forcing compliance with the TS and, thus, minimize potential safety consequences and operational risks. The discussion below provides further details surrounding the situation, and assessment of the safety significance. Note that this request was verbally approved at 2130, December 30, 1999 by John Zwolinski (NRC). A subsequent teleconference was held on January 1, 2000. The teleconference was held to clarify particular points relative to the Request for Enforcement Discretion (Reference 2) and the drawing contained in the previously submitted Amendment request.

The Plant Status at the time of the verbal request for a Notice of Enforcement Discretion (NOED) was as follows:

Power: 100% steady state
Pertinent
Equipment
Status: Diesel Generator (DG) 2 – Inoperable
SW Booster Pump-B – Inoperable
REC Subsystems – Inoperable

The Plant Status at the time of the January 1, 2000 teleconference was as follows:

Power: 100% steady state
Pertinent
Equipment
Status: SW Booster Pump-B – Inoperable
REC Subsystems – Inoperable

II. DISCUSSION

The following discussion provides the information identified in NRC Inspection Manual, Part 9900: Technical Guidance, "Operations - Notices of Enforcement Discretion," issued June 29, 1999, Section C 4.0, for NRC's use in assessing this request.

1. The Technical Specification or other license conditions that will be violated.

TS LCO 3.7.3 Required Action B for Reactor Equipment Cooling will be violated. The specification states:

Two REC subsystems shall be OPERABLE. Condition B requires, with both REC subsystems inoperable that the unit be placed in Mode 3 in 12 hours and Mode 4 in 36 hours.

Technical Specification Bases B 3.7.3 states: The OPERABILITY of the REC system is also based on having a visible water level in the surge tank gage glass and a maximum supply water temperature of 95 degrees F.

2. The circumstances surrounding the situation, including apparent root causes, the need for prompt action and identification of any relevant historical events.

The December 30, 1999, 0800, Operations rounds data provided a suspected indication of increased REC system leakage into the Drywell. Data continued to be gathered throughout the day to confirm the quantity and location of the leakage. At 1600, it was determined that leakage from the REC system had increased to approximately 23 gallons per day. This was detected by a decrease in the REC surge tank level and a corresponding increase in the unidentified leakage as measured by calculated leak rates from Drywell sump (sump F) pumpdowns and walkdowns of accessible areas in the plant which did not yield any significant leakage sources. There had been no recent system perturbations which would have accounted for the decrease in tank level.

Since December 30, 1999, reactor power has been cycled between approximately 70% and 100% power, and a Reactor Water Cleanup filter demineralizer has been backwashed. These evolutions tend to cause fluctuations in REC surge tank level which often take 24 or more hours to stabilize. The REC leakage criteria allow for expected level fluctuations due to known plant evolutions. REC leakage continues to be monitored before and after these evolutions to ensure that explainable fluctuations in REC leakage return to expected values and are within the allowable REC leakage limits. The current REC leakage rate is within REC leakage criteria based on the License Amendment 7-day inventory requirement.

In September 1999, REC leakage in a safety-related quad cooler fan coil was identified and corrected. Analysis of the cause of this leakage indicated pit corrosion of copper fan coil u-tubes. The remaining three safety-related quad cooler fan coils were inspected with no signs of leakage or tube deformation. During a forced shutdown, also in September 1999, leakage from the REC system was identified in the non-safety related drywell fan coil units. One drywell fan coil unit leak was repaired. An operability determination was performed on the remaining fan coil unit leaks. The corrosion in the drywell fan coil units is believed to be the result of a corrosion mechanism similar to that in the quad room. Plans are in place to address leaks in the "B" and "D" drywell fan coil units during the upcoming refueling outage. The REC supplies the fan coil units, Reactor Recirculation pump seals and an equipment drain header heat exchanger in the drywell. None of this equipment is safety related.

The need for prompt action is based on the TS required shutdown.

3. The safety basis for the request, including an evaluation of the safety significance and potential consequences of the proposed course of action. This evaluation should include at least a qualitative risk assessment derived from the licensee's PRA.

In letter NLS990050 NPPD requested a license amendment to allow the safety-related Service Water system to be credited as the back up supply to the REC system after at least seven days in a post LOCA condition. This in effect will reduce the requirement for REC system operability without makeup from 30 days to 7 days. The 30-day requirement stems from the post Three Mile Island accident commitment to not access the Reactor Building for 30 days post accident due to radiological concerns. The safety basis for both the amendment request and this NOED request is that, in the event of an accident, the Service Water backup to REC can ensure the required cooling function as described in the safety evaluation contained in NLS990050. This has no effect on the District's commitment to not enter the Reactor Building for 30 days post LOCA, since SW backup can be initiated from the Control Room.

NPPD has performed a risk assessment of the proposed NOED request. Based on the assessment it was concluded that there is no significant increase in risk relative to this request. At the time of the verbal NOED request, CNS was in a 7 day Action Statement for an inoperable DG. The potential increase in risk related to the inoperability of the DG and any other degraded conditions was evaluated under current plant procedures to address any risk impacts. There are no immediate risk concerns. Furthermore, any additional equipment degradations will be evaluated in accordance with station procedures. The DG was returned to operable status at 1445 on December 31, 1999.

REC leakage inside of the Drywell is initially characterized as “unidentified leakage.” If the leakage can be identified and quantified, it may be reclassified and considered as “identified leakage” per CNS TS Bases B 3.4.4. Without further analysis the leakage would remain characterized as “unidentified leakage” per Technical Specifications and LCO 3.4.4 would remain in effect should the leakage continue to increase. The REC system supplies cooling water to safety-related area coolers that support operability of various ECCS pumps and equipment located outside of the Drywell.

4. The basis for the licensee’s conclusion that the noncompliance will not be of potential detriment to the public health and safety and that no significant hazard consideration is involved.

In letter NLS990050 NPPD requested a license amendment to allow the safety-related Service Water system to be credited as the back up supply to the REC system after at least seven days in a post LOCA condition. This in effect will reduce the requirement for REC system operability without makeup from 30 days to 7 days. The 30-day requirement stems from the post Three Mile Island accident commitment to not access the Reactor Building for 30 days post accident due to radiological concerns. The conclusion that there is no potential detriment to the public health and safety and that no significant hazard consideration is involved for both the amendment request and this NOED request is described in the no significant hazard consideration contained in NLS990050.

5. The basis for the licensee’s conclusion that the noncompliance will not involve adverse consequences to the environment.

The basis for the District’s conclusion that there are no adverse consequences to the environment for this NOED request is the same as that included in NLS990050.

6. Any proposed compensatory measure(s).

Three compensatory measures have been put in place.

Operations crews on shift this weekend have been briefed on the NOED and the license amendment information. This briefing covered REC vulnerabilities and NRC concerns during certain postulated accident scenarios. Operations crews not working this weekend will be briefed as they return to shift rotation.

CNS TS require monitoring of the REC Surge Tank level on a once per 24-hour frequency. As a compensatory measure, the Operations department has initiated administrative guidance to monitor the Surge Tank level every two hours to ensure changes are noticed and responded to in a timely manner.

The REC system is currently inoperable based on the requirements of TS LCO 3.7.3, the definition of operability as stated in the associated TS BASES, and the acceptance criteria contained in Station Operating Procedure 6.LOG.601. This operability determination is based on the requirement for the REC system to operate for 30 days without inventory make-up.

CNS is currently operating based on NRC verbal approval granting this NOED. The NOED was granted based on the NRC's reasonable assurance that the proposed License Amendment currently under NRC review would be approved. This proposed Amendment would decrease the required time for REC to operate without inventory makeup from 30 days to seven days. CNS is monitoring the REC system inventory on an increased frequency (described above) utilizing acceptance criteria based on the seven-day inventory requirement for the system specified in the License Amendment request. If the REC system inventory leakage rate should increase to a point that compliance with the proposed seven-day inventory requirement cannot be met, CNS will comply with the actions statements in TS LCO 3.7.3.

7. The justification for the duration of the noncompliance.

The duration of this NOED is until approval and implementation of the License Amendment request contained in NLS990050 as supplemented by Attachment 2 to this letter (NLS990126). The justification for the duration is the low risk significance of staying at power with the REC leakage as compared to the risk associated with potential undesirable transients as a result of forcing compliance with the TS.

8. A statement that the request has been approved by the facility organization that normally reviews safety issues (Plant On-site Review Committee, or its equivalent).

This request has been reviewed and approved by the CNS Station Operations Review Committee.

9. The request must specifically address which of the NOED criteria for appropriate plant conditions specified in Section B is satisfied and how it is satisfied.

This request is being made under criteria 2.0.1 of Part 9900 Section B "For an operating plant, the NOED is intended to (a) avoid undesirable transients as a result of forcing compliance with the license condition and, thus, minimize potential safety consequences and operational risks...."

As described above the risk associated with a shutdown is greater than the risk associated with staying at power with the REC leakage.

10. If a follow-up license amendment is required, the NOED request must include marked-up TS pages showing the proposed TS changes and a commitment to submit the actual license request within 48 hours.

The required license amendment request was submitted in correspondence NLS990050, dated June 15, 1999. As described in the amendment request there are no TS changes. The required license changes are the same as included in the NLS990050 submittal.

11. For NOEDs involving severe weather or other natural events, ...acceptability of any increased radiological risk to the public and the overall public benefit.

There are no severe weather or other natural events associated with this NOED request.

III. CONCLUSION

The District believes that this request for enforcement discretion is in the best interest of the public health and safety. The District concludes that this noncompliance to Required Action Completion Time requirements of CNS Technical Specification LCO 3.7.3, "Reactor Equipment Cooling" (REC) until the NRC approves the proposed License Amendment, followed by District implementation, would avoid undesirable transients as a result of forcing compliance with the TS and, thus, minimize potential safety consequences and operational risks and would not increase the consequences of any accident or otherwise result in adverse environmental consequences. Therefore, the District requests that the NRC grant this temporary enforcement discretion until NRC approval of the proposed License Amendment and District implementation.

RESPONSE TO NRC VERBAL QUESTIONS

Introduction

In a teleconference between J. Sumpter, et. al., (NPPD) and L. Burkhart, et. al., (NRC) on November 9, 1999, the NRC identified a postulated single failure vulnerability associated with the Amendment request contained in NLS99050. In a teleconference between NRC and NPPD personnel on January 1, 2000 additional questions were raised. This attachment provides the responses to the NRC questions raised in these teleconferences. Figure 1 provides an updated simplified diagram of the Reactor Equipment Cooling System. This figure includes annotation of the divisional power supply for each pertinent valve.

Question 1 Single Failure Vulnerability Information Request

In a teleconference between J. Sumpter, et. al., (NPPD) and L. Burkhart, et. al., (NRC) on November 9, 1999, the NRC identified a postulated single failure vulnerability associated with the Amendment request contained in NLS99050. This single failure vulnerability involved the potential to divert the Service Water backup flow away from the Reactor Equipment Cooling critical loops via the non-critical drywell loop and a resultant flow being established through the surge tank vent. The District has completed an evaluation of this scenario and concluded that the postulated event can be accommodated by the existing REC system design. The supply valves to the drywell non-critical header, and two other non-critical headers (REC-MOV-700MV, -702MV, and -1329MV) are supplied motive and control power from Division I. The discharge valves from the heat exchangers (REC-MOV-712MV and -713MV) are supplied motive and control power from Division II. With isolation valves from both Division I and Division II in the flow path to the non-critical headers, there is no credible single failure which could prevent the isolation of the non-critical headers. The District acknowledges that the Figure provided in the original Amendment Request would have led the NRC to ask about this particular single failure.

USAR Chapter X, Section 6.0 states:

Low pressure in the common discharge header signals an alarm in the main control room and automatically closes the Division I motor-operated valves in the supply headers to the non-safety-related-services. This action is initiated by a pressure switch which will send a signal to close MO-700MV, MO-702MV, and MO-1329MV when low pressure is sensed.

Low pressure in the 'A' or 'B' heat exchanger's outlet signals an alarm in the main control room and closes the associated Division II motor-operated valve in the supply line to the

nonessential services. This action is initiated by a pressure switch in each heat exchanger's outlet which will send a signal to close MO-712MV if a low pressure condition is sensed in the 'A' heat exchanger outlet, and MO-713MV if a low pressure condition is sensed in the 'B' heat exchanger outlet.

Based on the response to Question 1, the District conducted a review to determine if any additional single failure scenarios could result in overflow of the Surge Tank through the vent line. No additional scenarios were identified.

Question 2 Normal Operations Position of the Cross-Connect Valves

The REC cross-connect valves (REC-MOV-694MV and REC-MOV-695MV) are maintained in the open position during normal operation. If either one of these valves is closed, the entire REC system is declared inoperable. See paragraph 6.5.1 of USAR Chapter X, Section 6.0, "Reactor Equipment Cooling System."

Question 3 Impact of the Quality of the Leak-Tightness of Non-Critical Loop Header Isolation

A question was asked relative to the impact of the non-critical loop header isolation valves leak-tightness on the operability of the REC System if a leak develops in the non-critical header. Specifically, how can the required seven-day inventory in the Surge Tank be guaranteed if we do not have a leak free seal in the non-critical loop header isolation valves.

Presently, REC system operability is determined based on total system leakage. There is no distinction between leakage rates in the critical or non-critical headers. Once total system leakage reaches a rate that indicates the system cannot operate for a minimum of seven days without make up water, the actions of TS LCO 3.7.3 will be performed. Since the operability of the system is determined on total system leakage, the position of the non-critical header isolation valves have no impact on ensuring the required seven day inventory is maintained in the surge tank.

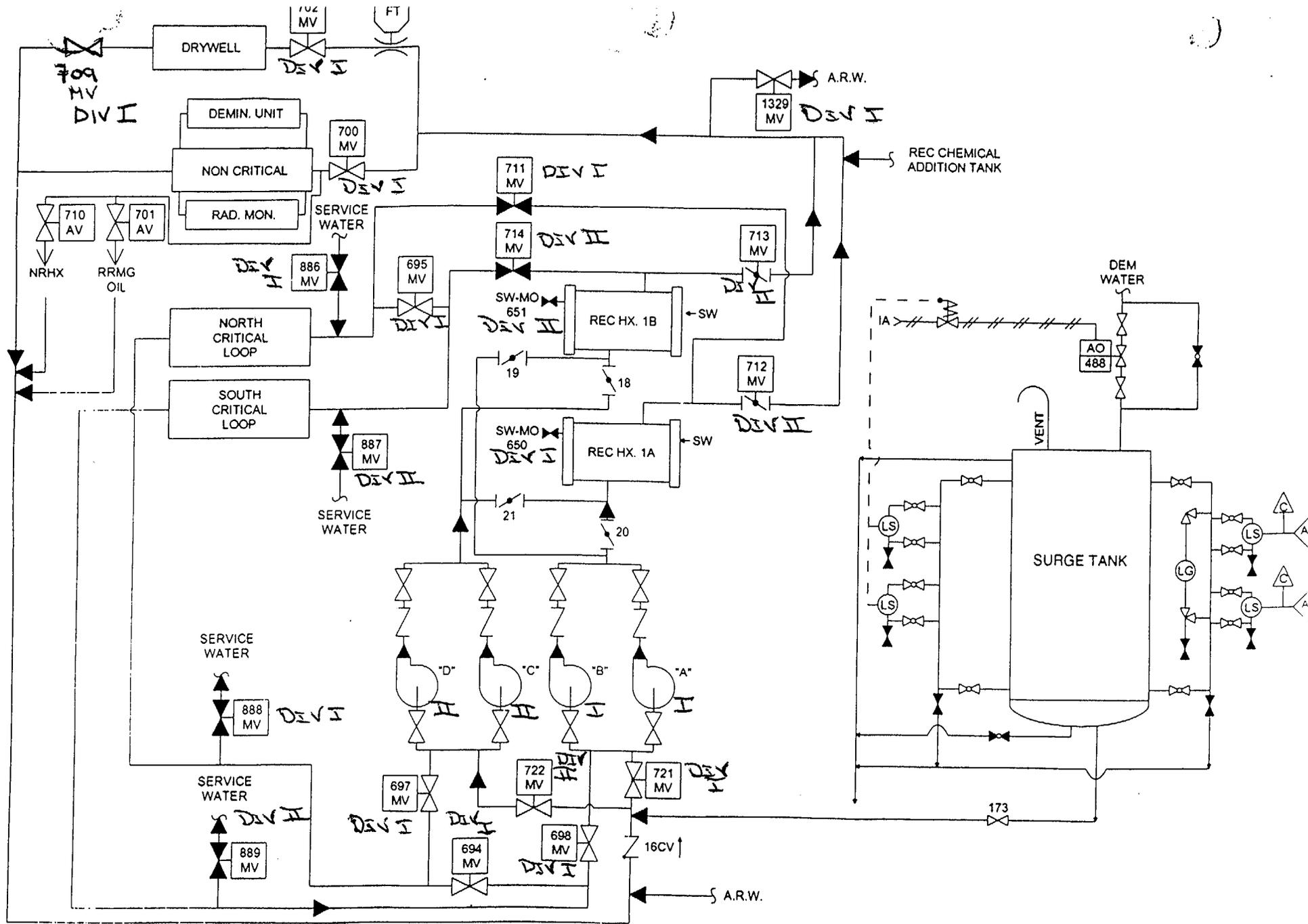
The non-critical header isolation valves are required to isolate a potential flow path to the REC Surge Tank (which is vented to the Reactor Building atmosphere) during the Large Break LOCA scenario if the SW system back-up is required to be initiated following postulated equipment failures. A small leakage rate through these valves has no impact on the ability of the REC System to supply 7 days of cooling water without inventory makeup or the ability of the SW system to provide the required cooling flow through the REC critical headers.

Question 4 REC Leakage Operability Assessments

A question was asked regarding what actions are performed if REC leakage is found.

Procedure 6.LOG.601, "Daily Surveillance Log – Modes 1, 2, and 3" requires:

For a level change rate that is not expected and is $> 1-5/16$ " per day, "Assess REC system operability. Calculate and monitor level change rate. Contact PED [Plant Engineering Department] to assist with contingency actions. Investigate source of leakage." Actions to satisfy these criteria are not specifically discussed, however, good operator practice is to increase the frequency that the surge tank level is monitored, perform system walkdowns and use other available means to determine the source of the leakage (i.e. monitor the drywell "F" sump in-leakage). These actions are currently being performed for the on-going increased leakage in the REC system. Station operators are monitoring the REC surge tank level approximately every 2 hours (this frequency may be increased or decreased based on plant conditions and how the conditions are changing), the accessible portions of the system have been walked down with no significant leakage noted, and the in-leakage to the drywell "F" sump is being monitored and compared against the decrease in the REC Surge Tank level.



REC SYSTEM Normal Power Operation

Figure 1, Rev. 11

COR002-19

