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ACCESSION NBR:9810070326 DOC.DATE: 98/09/30 NOTARIZED: NO DOCKET #
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SUBJECT: Forwards response to request for addl info re GL 96-06.

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September 30, 1998
GO2-98-171

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21,
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
RELATED TO GENERIC LETTER 96-06**

Reference: Letter, dated July 30, 1998, NRC to JV Parrish (SS), "Request for Additional Information Related to the GL 96-06 Response for WNP-2 (TAC NO. M96886)"

In the referenced letter, the Staff requested that the Supply System provide additional information relative to waterhammer and two-phase flow in containment air cooler cooling water systems. Provided in the attachment is our response to that request.

Should you have any questions or desire additional information regarding this matter, please contact me or Mr. PJ Inserra at (509) 377-4147.

Respectfully,

JV Parrish
Chief Executive Officer
Mail Drop 1023

060146

Attachment

cc: EW Merschoff - NRC RIV
GA Pick - NRC RIV
C Poslusny, Jr. - NRR
NRC Sr. Resident Inspector - 927N
DL Williams - BPA/399
PD Robinson - Winston & Strawn

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
RELATED TO GENERIC LETTER 96-06

ATTACHMENT

NRC Question #1

Describe measures that have been taken to assure that plant operators will not use the CACs [Containment Air Coolers] as an option during (or following) accident conditions in a way that could result in waterhammer or two-phase flow.

Supply System Response:

The Supply System has not taken any specific actions to date to modify the process by which operators would use the containment air cooling system during a design basis accident (DBA) scenario. This is primarily due to the low probability of the occurrence of a DBA scenario which would require the use of the containment air cooling system. The Emergency Operating Procedures (EOPs) address increasing containment temperatures that could occur during certain DBA scenarios. The EOPs also presently permit the Reactor Closed Cooling Water (RCC) system to be placed back in service, after RCC containment isolation valves have already closed, to help reduce containment temperature. However, training provided to the operating crews emphasizes that placing containment cooling back in service during DBA scenarios provides little benefit due to the minimal increase in heat removal capability. Additionally, restoration of the RCC system during a DBA scenario is difficult and time consuming. With little benefit derived, it is not expected that RCC system restoration would receive priority during a DBA scenario using current EOPs.

The Supply System does, however, intend to modify our EOPs so that the RCC system cannot be used as a means to provide containment cooling during DBA scenarios. Please see our response to Question #7 below.

NRC Question #2

Implementing measures to assure that waterhammer will not occur, such as prohibiting post-accident operation of the affected system, is an acceptable approach for addressing the waterhammer concern. However, all scenarios must be considered to assure that the vulnerability to waterhammer has been eliminated. Confirm that all scenarios have been considered, including those where the affected containment penetrations are not isolated (if this is a possibility), such that the measures that have been established are adequate to prevent the occurrence of waterhammer during (and following) all applicable accident scenarios.

Supply System Response:

As discussed in our response to Question #7 below, the Supply System intends to modify our EOPs and remove the option for operators to use the RCC system during high containment temperature conditions that could occur during DBA scenarios. During DBA conditions that create a harsh containment environment, the RCC containment isolation valves will automatically close and remain closed throughout the accident, thus eliminating the potential for waterhammer and two-phase flow.

ATTACHMENT

NRC Question #3

Discuss specific system operating parameters and other operating restrictions that must be maintained to assure that the waterhammer and two-phase flow analyses remain valid (e.g., surge tank level, pressures, temperatures), and explain why it would not be appropriate to establish technical specification requirements to acknowledge the importance of these parameters and operating restrictions. Also, describe and justify use of any non-safety related instrumentation and controls for establishing and maintaining these parameters and operating restrictions.

Supply System Response:

At this time, the Supply System has elected to not perform a waterhammer and two-phase flow analysis. Instead, as already noted, we have chosen to prevent the use of the RCC system during DBA scenarios so that waterhammer and two-phase flow will not be a concern. Changes to technical specification requirements are therefore, not appropriate.

NRC Question #4

Confirm that the waterhammer and two-phase flow analyses included a complete failure modes and effects analysis (FMEA) for all components (including electrical and pneumatic failures) that could impact performance of the cooling water system and confirm that the FMEA is documented and available for review, or explain why a complete and fully documented FMEA was not performed.

Supply System Response:

An FMEA has not been performed because the Supply System has elected to not perform a waterhammer and two-phase flow analysis. Instead, the Supply System intends to prevent the use of the RCC system during DBA scenarios so that waterhammer and two-phase flow will not be a concern.

NRC Question #5

Describe and justify all assumptions and uses of "engineering judgment" that were credited.

Supply System Response:

The Supply System has not credited any assumptions and uses of "engineering judgment" because we are not performing a waterhammer and two-phase flow analysis at this time. Instead, the Supply System intends to prevent the use of the RCC system during DBA scenarios so that waterhammer and two-phase flow will not be a concern.

ATTACHMENT

NRC Question #6

Provide a simplified diagram of the affected system, showing major components, active components, relative elevations, lengths of piping runs, and the location of any orifices and flow restrictions.

Supply System Response:

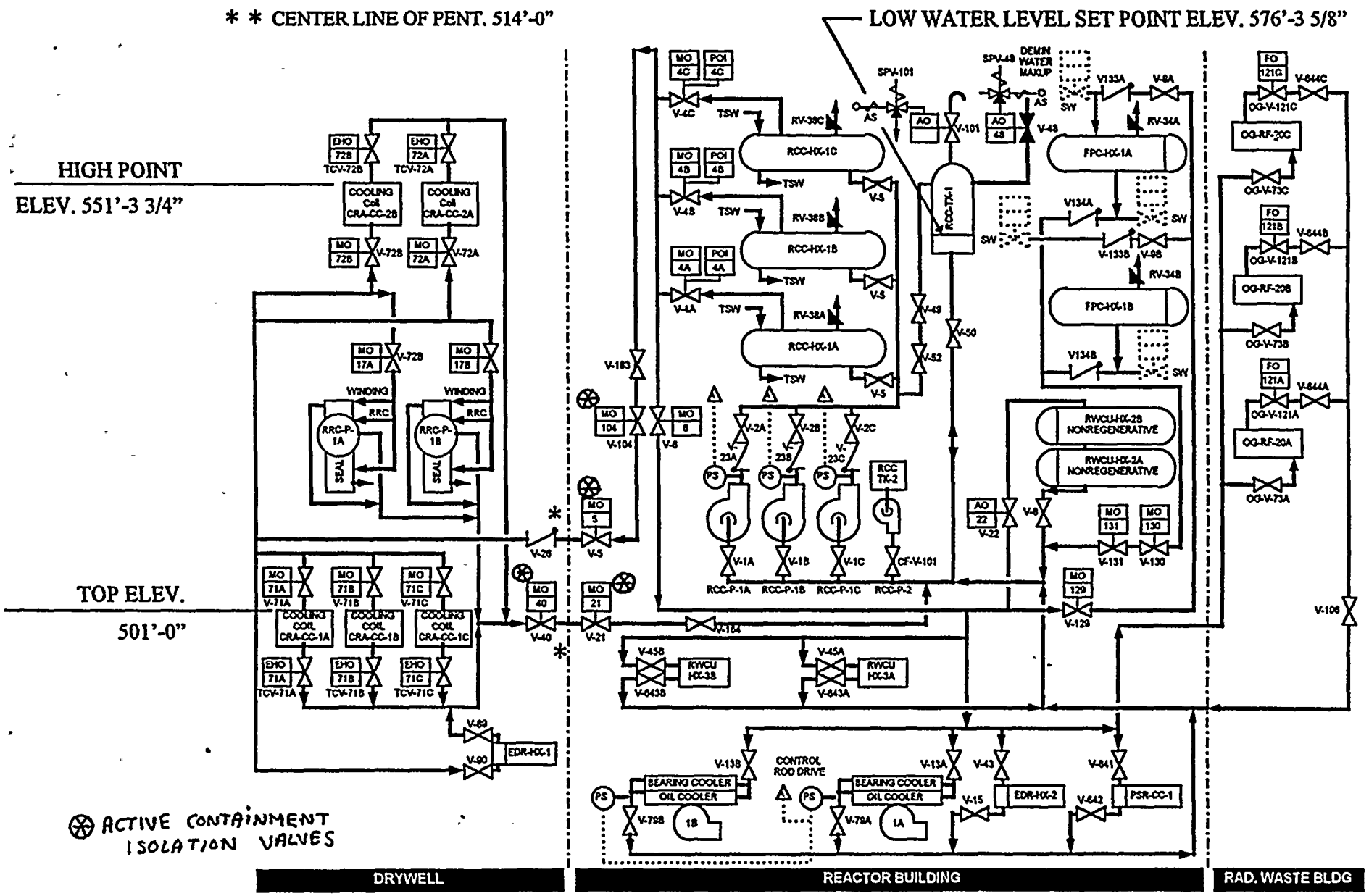
A simplified diagram is provided as part of this attachment. Piping run lengths were not provided because a detailed waterhammer and two-phase flow analysis was not performed.

NRC Question #7

Describe in detail any plant modifications or procedure changes that have been made or are planned to be made to resolve the waterhammer and two-phase flow issues including completion schedules.

Supply System Response:

The Supply System will modify our EOPs so that plant operators will not use the RCC system in a manner that could result in waterhammer or two-phase flow. In particular, the EOPs presently address increasing containment temperatures that could occur during certain DBA scenarios. The EOPs permit the RCC system to be placed back in service, after RCC containment isolation valves have already closed, to help reduce containment temperature. Applicable EOPs will be modified by November 30, 1998, so that the RCC system cannot be used to provide containment cooling once RCC containment isolation valves have automatically closed during a DBA scenario. Should the Supply System elect in the future to use the RCC system to lower containment temperatures as described above, appropriate analyses will be performed to ensure that two-phase flow and waterhammer within the system will not result in a rupture of the primary containment boundary.



(THIS IS NOT A CONTROLLED DRAWING: REFER TO FLOW DIAGRAM M525)

FIGURE 1.21.-1 SIMPLIFIED REACTOR CLOSED COOLING WATER SYSTEM