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SEP 3 0 1974

Docket Nos. 50-508/509

R. C. DeYoung, Assistant Director for Light Water Reactors, Group 1, L

REQUEST FOR ADDITIONAL INFORMATION FOR WASHINGTON PUBLIC POWER SUPPLY SYSTEM, WNP-3 & 5

Plant Name: Washington Public Power Supply System, WNP-3 & 5
Docket Nos.: 50-508/509
Licensing Stage: CP
NSSS Supplier: Combustion Engineering
Architect Engineer: Ebasco
Containment Type: Dry, dual
Responsible Branch & Project Manager: LWR 1-3; P. O'Reilly
Requested Completion Date: September 27, 1974
Applicant's Response Date: November 29, 1974
Review Status: Awaiting Information

The enclosed request for additional information (Q-1) for the subject plants has been prepared by the Containment Systems Branch after reviewing the applicable portions of the WNP-3 PSAR. Our questions pertain to the containment analysis, subcompartment analysis, combustible gas control system, containment spray system, isolation system, and shield building ventilation system.

A draft of these questions was provided to the Project Manager on September 13, 1974.

Original signed by:
Robert L. Tedesco

Robert L. Tedesco, Assistant Director
for Containment Safety
Directorate of Licensing

Enclosure:
As stated

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Docket Files

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DATE	9/26/74	9/27/74	9/27/74			

042.0 CONTAINMENT SYSTEMS BRANCH

042.1 (6.2.1) Table 5.3-2 gives the pressure of the secondary side of the steam generators as 1070 psig for full power and 1170 psig for zero power. These pressures are higher than those used in the steam line break analysis. Justify the pressures used in the steam line break analysis or redo the analysis using the higher pressure values.

042.2 (6.2.1) In the analysis of steam line breaks you analyzed a spectrum of double-ended breaks at various power levels. For breaks smaller than the full double-ended break, the assumption of slot breaks would appear to be more appropriate. Discuss the effect on your calculations if slot breaks were assumed.

042.3 (6.2.1) Provide the following information regarding the steam line break analysis:

(1) Discuss possible single failures in the main and auxiliary feedwater systems by which additional fluid could be added to the steam generator following a steam line break. The failure of an isolation valve in the main or auxiliary feedwater lines and the addition of fluid stored in the lines and injected by the feedwater pumps should be considered.

(2) If the above single failure analysis indicates that additional fluid mass and energy should be included in the steam line break analysis, redo the analysis and provide the revised mass and energy release data.

042.4 (6.2.1) Provide the results of the subcompartment pressure response analyses; i.e., the calculated pressure differentials as a function of time for the most severe pipe break in each subcompartment.

042.5 (6.2.1) Provide analyses of spray line and surge line ruptures in the pressurizer compartment.

042.6 (6.2.1) Provide a tabulation of the flow coefficients used in the reactor cavity subcompartment analysis. Using two representative vent flow path examples from the reactor cavity model, show how the flow coefficients were determined.

042.7 (6.2.1) Provide and justify the break type and area assumed for the reactor cavity analysis which results in the maximum reactor cavity pressure. Provide plan and elevation drawings showing the assumed break location, and give the dimensions of the pipe

042.7 (6.2.1) penetrations, reactor cavity annulus, upper and lower reactor cavities, and insulation.

042.8 (6.2.1) Identify the model volumes shown in figures 6.2.1-49 through 6.2.1-51B for the pressurizer, steam generator, and reactor cavity subcompartment models.

042.9 (6.2.1) Describe how movable obstructions to vent flow, such as insulation, ducting, plugs and seals, were treated in the subcompartment analyses.

042.10 (6.2.2) Provide plan and elevation drawings of the containment sumps showing the protective screen assemblies over the sump suction points. Compare the design of the assemblies to the guidelines of Regulatory Guide 1.82.

042.11 (6.2.2) The statement is made on page 6.2-126, that if the operator determines that containment spray system initiation was inadvertent, he may terminate spray flow. Discuss the information that will be available to the operator to make this determination, and describe the procedure the operator must follow.

042.12 (6.2.2) The statement is made on page 6.2-126 that actuation of the containment spray system is initiated by the coincidence of a two-out-of-four containment high-high pressure coincidence circuit signal and a safety injection actuation signal. Discuss the adequacy of this approach to limit containment pressures for postulated main steam or feedwater line breaks inside containment for both small and large piping ruptures.

042.13 (6.2.3) Discuss the proposed capability of the shield building to resist exfiltration and maintain a negative pressure under wind loading conditions characteristic of the plant site.

042.14 (6.2.3) Specify and discuss the basis for establishing the design inward leak rate of the shield building.

042.15 (6.2.3) The statement is made on page 6.2-165 of the PSAR that containment isolation will be initiated by means of a Containment Isolation Signal (CIAS), which occurs on containment high pressure. Discuss the adequacy of this approach, where there is no diversity in the containment isolation signals. Discuss and justify your reasons for not including the safety injection and main steam isolation signals as containment isolation signals. Discuss and justify your reasons for not wanting the main feedwater lines to be isolated upon receipt of a containment isolation signal.

042.16 (6.2.4) Discuss when during normal plant operation purging of the containment would be required, including the frequency and duration of purge operations. Identify the instrumentation and setpoints that will initiate containment isolation, including purge and vent valve closure. Provide assurance that containment isolation will occur.

042.17. (6.2.4) Discuss the essential specifications that are used in the design of the containment vent and purge valves; e.g., design temperature, pressure, differential pressure, radiation exposure and dynamic loads. Describe the tests that have or will be conducted to demonstrate that the valves will operate as specified.

Justify that test conditions are representative of conditions that would be expected to prevail following a pipe break accident. Provide the test results.

042.18 (6.2.5) Specify the mass and area of aluminum and zinc in the containment and the mass of zirconium cladding in the core.