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RO (3)

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RFraley (16)

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pressure plus 10% that the component could ever experience in either the normal, upset, emergency or faulted conditions. The component will be hydrotested at 1.5 times the design stress. It was the staff's opinion that the presented design approach satisfied Regulatory Guide 1.48.

A report describing the design criteria for inactive pumps and valves is scheduled for submittal by the applicant during January 1974.

Pipe Whip Inside Containment

The applicant and the representatives from Burns and Roe stated that they were committed to examine breaker locations in all high energy lines within the reactor containment vessel in accordance with Regulatory Guide 1.46. The applicant expects to submit their report on Pipe Whip Inside Containment during March, 1974. Any differences between the applicant's approach and Regulatory Guide 1.46 will be discussed in detail in the submitted material.

High Energy Pipe Break Outside Containment

The applicant and the representatives from Burns and Roe stated that their analysis would follow the guidelines presented in the AEC letters of December 22, 1972 and January 12, 1973. Staff comments included the suggestion that an effort be made to minimize encapsulation of pipes and components and that the section of the main steam line between the containment vessel and the outer isolation valve must be included in the analysis. The applicant should demonstrate sufficient conservatism to render a break in the main steam line between the containment vessel and the outer isolation valve incredible. This could be done by a substantial reduction of the material allowable stress values and/or augmented inservice inspection techniques.

The applicant expects to submit his formal response to the AEC December 22, 1972 letter by April 1, 1974.

Main Steam Isolation Valve Seal

The applicant stated that they were committed to a seal system for the MSIV but that no decision had been made on the conceptual design of the seal system. The applicant expects to submit a conceptual design of the seal system for AEC review by June 1, 1974.

Ultimate Heat Sink

The applicant stated that they were having problems with the design of the spray headers for the ultimate heat sink pond in that they were not protected against missile damage. The applicant will submit information on the design

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margin of the ultimate heat sink in the event of spray header failure due to tornado caused missile damage and on the QA commitment for the makeup water system during January 1974.

Drywell to Wetwell Leakage Including Vacuum Breaker Design

The applicant and the representatives of Burns and Roe presented a discussion of potential leak sources between the drywell and wetwell, the system to be used to detect these leaks and the procedures to be used to operate the leak detection system.

Potential leak sources which were discussed in greatest detail and which received the most discussion included the vacuum breaker valve design, the concrete floor sealant and the metal peripheral seal of the drywell floor.

With regard to the vacuum breaker valves, it was pointed out by the staff that the reliability of these valves is low and that the accuracy and reliability of the valve position indicating switches should be carefully considered.

The applicant stated that he was examining suitable floor sealers even though he did not expect drywell to wetwell leakage through the concrete floor to be a problem.

The details of the floor to containment seal were presented. The seal is essentially a sectioned stainless pipe attached to carbon steel support plates which are then attached to the floor and the containment vessel. The seal allows differential horizontal and vertical movement, water drainage and inspection of seal welds. A report dealing with drywell to wetwell leakage is scheduled for submittal by the applicant during April 1974.

Drywell to Wetwell Leak Detection System

The leak detection system proposed by the applicant has the potential for periodic or continuous leak rate measurement. The system is designed to measure the leak rate between the drywell and wetwell but will not indicate the leakage path. The staff suggested that consideration be given to problems associated with differing environmental conditions between and within the two volumes and that consideration be given to the inclusion of a method for calibrating the leak detector. A report dealing with the drywell to wetwell leak detection system is scheduled for submittal by the applicant during April 1974.

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Primary Containment Post LOCA Hydrogen Control System

The applicant stated that a post LOCA hydrogen control system is being designed that will use the principle of recombination. Both thermal and catalytic recombiners are being considered. A report describing the containment hydrogen control system will be submitted by the applicant for review during April 1974.

Sacrificial Shield Design

An added item to the published meeting agenda was a review of the sacrificial shield design. The staff's comments to the presented design concept included the following:

1. Additional loads to the reactor pedestal resulting from the erection of the sacrificial shield should be considered.
2. The sacrificial shield erection procedure should be included in the submitted material.
3. The calculations of the pressure differential across the sacrificial shield resulting from a pipe break should be shown.
4. The temperature increase in the annulus should be considered following a pipe break as should the problems resulting from temperature differences between the steel and concrete components of the sacrificial shield.
5. The difference in radial growth between the sacrificial shield and pedestal should be considered.
6. Increased pressure resulting from blockage of the sacrificial shield annulus by insulation or other material following a pipe rupture should be considered.
7. Operating thermal stresses and temperature gradients must be assumed to be present when an accident occurs.
8. The applicant should show construction and assembly details for the top of the reactor pedestal.

The applicant expects to submit detailed information on the sacrificial shield design for ABC review during March 1974.

D. M. Elliott, Project Manager
Boiling Water Reactors Branch 1
Directorate of Licensing

Enclosure:	Reference List			
SURNAMES	L: BWR-1 D.M.E. DM Elliott:ks	L: BWR-1 WR Butler		
DATE	11/9/73	11/10/73		

MEETING ATTENDANCE

Washington Public Power Supply System

WPPSS Nuclear Project-2 (formerly Hanford-2)

October 17, 1973

AEC

D. Elliott
S. Salah*
D. Tondi*
S. Miner*
J. Richardson*
C. Long*

Burns & Roe

J. Forman
R. Baldwin
F. Patti
K. Ronis
R. Jensen
J. Verderber

WPPSS

R. Chitwood
J. Woolsey
J. Mowery
C. Fies

GE

P. McCabe
H. Summers
J. Major
J. Power

October 18, 1973

AEC

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A. Gluckman*

Burns & Roe

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