

52-001

TO: DAVE DIEC, NRC-NRR

October 9, 1992

FROM: ART MCSHERRY, GE *Art M. Sherry*

SUBJECT: ABWR SUSCEPTIBILITY TO ISOLATION OF RHR/SDC ON LOSS OF POWER

The ABWR Shutdown Risk Report states that, unlike the operating BWRs, the ABWR design will not cause isolation of the RHR/SDC function on loss of RPS AC power. Per your request, the following discussion supplies more detail on the ABWR isolation system design and why spurious isolations will not occur on loss of AC power.

For operating BWRs, loss of AC power to the RPS MG sets results in a reactor trip and isolation of certain systems attached to the RPV. One of the systems that is isolated is the RHR/SDC. This is a fail safe design that is intended to protect the core from loss of power transients. When the plant is shutdown though, temporary loss of SDC will occur if RPS power is interrupted.

In the ABWR, the RPS, ECCS, and isolation functions are controlled by the Safety System Logic and Control (SSLC) system. The attached section of the ABWR SSLC design specification contains the requirement that the SSLC isolation function be powered by 125 VDC which is backed up by Class 1E batteries (2.2.2.6 a). Thus, a loss of one AC power supply to the SSLC will not result in a RHR/SDC isolation signal. In fact, loss of all AC to the SSLC will not result in any trip or isolation signals unless DC power is also affected or the loss of power results in plant conditions requiring isolation. The ABWR Class 1E batteries are designed for at least 8 hours of operation following loss of AC power. This is adequate time to shift SDC to an unaffected division or to restore AC power to the SSLC inverters.

The ABWR SSLC is designed for high plant availability (i.e., minimization of spurious trips) while also ensuring that plant trips and isolation will occur when needed due to actual plant conditions requiring these functions.

If you need additional information or clarification of the ABWR SSLC, please contact me at (408) 925-1917.

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