



Kenneth W Berry  
Director  
Nuclear Licensing

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-1636

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Document Control Desk  
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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -  
WITHDRAWAL OF COMMITMENT TO PERFORM POST ACCIDENT  
OXYGEN ANALYSIS, NUREG 0737 - ITEM II.B.3

By letter dated August 12, 1983 Consumers Power Company described the actions that would be taken in response to the requirements established by NUREG-0737, Item II.B.3. In its response to Criterion 10(e), Consumers Power Company stated the oxygen content of the primary coolant sample would be determined by a Leeds and Northrup oxygen instrument utilizing a polarographic probe. Based upon a review of our responses to NUREG-0737, Item II.B.3, in preparation for upgrading post accident sampling equipment at the Palisades Plant, we have determined polarographic analysis of a sample of undiluted reactor coolant for oxygen could result in unacceptable radiological exposures to the personnel conducting the analysis. Polarographic analysis requires the handling of relative large sample volumes which, under post-accident conditions, would be highly contaminated. Analysis of highly contaminated samples is not consistent with the requirement to maintain personnel exposures as low as reasonably achievable (ALARA). Therefore, Consumers Power Company withdraws its commitment to provide post-accident polarographic analysis of the primary coolant for oxygen. Withdrawal of the commitment to perform an oxygen analysis will not, however, significantly reduce the ability to characterize post-accident primary coolant conditions for the reasons noted below.

The primary purpose of monitoring the oxygen concentration in the reactor coolant after an accident is to aid in providing an estimate of the gross corrosion potential present in the primary system. However, other factors, including pH and chloride concentration, have a larger impact on the gross corrosion potential of the primary coolant than does oxygen concentration. The absence of chloride (less than 0.15 ppm) and/or maintenance of the primary coolant at a pH of 7.0 or above indicates a gross corrosion potential does not exist and, therefore, reduces the necessity to accurately determine the oxygen concentration in the primary coolant. In addition, Item II.B.3 recognizes that direct measurement of oxygen concentration is not mandatory provided the licensee can determine total dissolved gas or hydrogen concentration in the

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coolant sample (Criterion 4). Consumers Power Company believes that a measured dissolved hydrogen residual of 10 cc/kg, or greater, provides acceptable verification that dissolved oxygen in the primary coolant is less than 0.1 ppm. Further, the guidance provided by Regulatory Guide 1.97 states that "(W)ithin the first thirty days after an accident, oxygen analysis need not be performed until chloride analysis indicates a chloride concentration greater than 0.15 ppm."

Therefore, based on the requirements of NUREG-0737, Item II.B.3, Criterion 4 and the guidance provided by Regulatory Guide 1.97, Consumers Power Company withdraws its commitment to perform oxygen analysis on post-accident primary coolant samples immediately following an accident. Consumers Power Company will however, determine the oxygen content of post-accident coolant samples when the measured chloride or hydrogen concentration indicate a corrosion potential exists, and when the analysis is consistent with ALARA considerations.

*Kenneth W Berry*

Kenneth W Berry  
Director, Nuclear Licensing

CC Administrator, Region III, USNRC  
NRC Resident Inspector - Palisades