





Cause Description and Corrective Actions (cont'd)

Regulatory Guide values. Interim efforts to meet the present sensitivity involve utilizing the maximum sample density and counting times in test performance:



## ATTACHMENT A

An NMP-1 Annual Environmental SR&AB audit was performed in October of 1980. As a result of the audit, we were informed that the sensitivity required by the Environmental Technical Specifications (Table 3.2-1 of Section 3.2) for radiological fish analysis was 80 pCi/kg (dry weight). The data was received between June 30 and July 7. This sensitivity or LLD (lower limit of detection) is normally reported as pCi/g (wet weight). Since the ETS required pCi/kg (dry weight) it was necessary to derive a wet to dry weight ratio for each fish sample. The contractor upon performing the required calculations determined that the required sensitivity of LLD in Ci/kg (dry) was not attained for several samples.

Sample analyses are performed for GSA (Gamma Spectoral Analysis), Sr-89 and Sr-90 as required by ETS on fish samples collected twice per year.

NMP-1 samples are collected in May and November. The required sensitivities, (as derived) were attained for Sr-90 analysis. Sensitivities were attained for Sr-89 except for one sample (RMC #31698) for which a re-analysis was requested on November 6. Analyses results for GSA, after converting results to pCi/kg (dry) revealed that most nuclides did not meet the ETS sensitivity. Although some nuclides in the GSA scan had sensitivities of 80 pCi/kg (dry) or better (such as Mn-54 or Cs-134), many did not (such as Fe-59, Cs-137, or Zn-65).

The sensitivity problems were reviewed with the Testing Contractor. It was decided that the sensitivity could be improved by increasing the sample size slightly (the size is limited due to the analysis type but the sample density may be able to be increased) and by increasing the count time. Count times are normally 100 minutes for Sr-89 and Sr-90 analyses and 5,000 seconds for GSA analyses. We were also informed that the one Sr-89 sample that was not within ETS sensitivities could be reanalyzed and counted with a maximum count time to achieve the sensitivity. This re-analysis was ordered on November 6, but the contractor did not think that sensitivities for all the nuclides in the GSA analyses could be attained by increasing sample size and count times.



Therefore, action taken in regards to this Occurrence was three fold. First, the Sr-89 sample was re-analyzed with maximum sample size and count time. Second, all Sr-89 and Sr-90 samples will be counted for the maximum count times and sample volumes until MDA requirements are revised. Third, all GSA analyses will utilize maximum sample size densities and count times in the future.

It must be noted that the NMP-1 ETS for radiological fish analysis of 80 pCi/kg (dry) is not considered to be a reasonable specification. As listed in Table 3 of Reg. Guide 4.8, "Environmental Technical Specifications for Nuclear Power Plants" dated December 1975, or in Table 2 of "Branch Technical Position" to Reg. Guide 4.8 dated November 1979, the most limiting LLD for GSA analyses is 130 pCi/kg wet weight.

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