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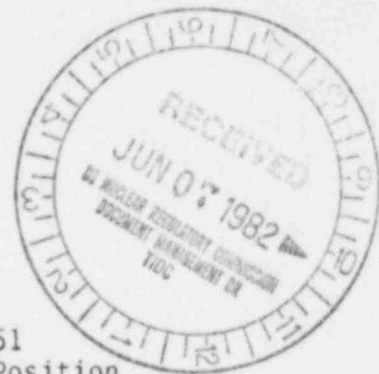


May 20, 1982  
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Office of Nuclear Reactor Regulation  
Attention: Mr. R. Dale Smith, Chief  
Low-Level Waste Licensing Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555



Dear Mr. Smith:

Re: St. Lucie Unit 1, Docket No. 50-335  
Turkey Point Units 3 & 4, Docket Nos. 50-250, 50-251  
Comment on Waste Classification Branch Technical Position

Please find attached our comments on the subject Branch Technical Position as requested by your letter dated March 31, 1982.

Very truly yours,

Robert E. Uhrig  
Vice President  
Advanced Systems & Technology

REU/JEM/mbd

cc: J.P. O'Reilly, Region II  
Harold F. Reis, Esquire

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Comments to  
The Draft Branch  
Technical Position  
On Radioactive  
Waste Classification

The Commission should be commended for their efforts to develop a Branch Technical Position (BTP) regarding the classification of radioactive wastes with respect to 10 CFR 61. In particular, the criteria for acceptable minimum sensitivities is an example of the type of guidance for which the industry is in need, although we are not certain that the specified limit of detection (.01X) is practical to achieve.

With respect to the question concerning the acceptability of using the outlined three tiered measurement system for nuclear plant wastes, we are concerned that NRC is under the impression that techniques for measuring and quantifying all of the radioisotopes listed in 10 CFR 61 in nuclear plant waste streams currently exist. While this may be true for gamma emitting isotopes (which generally the industry doesn't have a problem with), our understanding is that this is far from the case for many of the beta emitting radioisotopes listed, which are likely to be in very low concentrations and mixed with other radioisotopes that are strong gamma or gamma plus beta emitters. Assuming that 10 CFR 61 is close to becoming a rule, we urge the Commission to carefully evaluate the impact of the Table 1 waste classification requirements on nuclear plant wastes and give industry ample time to develop the proper measurement techniques, and to evaluate the various nuclear plant waste streams. We are aware that Table 1 of 10 CFR 61 represents the list of radioisotopes that NRC considers to be most important with respect to population dose scenarios, and that NRC is attempting to address not only the classification of radioactive waste but also the quantification of radioactivity in the burial sites. We would like to offer some specific examples, however, which we feel are not unrepresentative of others in the industry and urge NRC to carefully consider the impact of their BTP on these situations.

1. Approximately 89% of FPL's total volume of radioactive waste generated from January thru September 1981 could be considered very low activity waste (about 6% of the total activity shipped). Of that, about 71% was compacted and non-compacted dry active waste (trash) with an average total specific activity of about  $1 \times 10^{-2}$  uci/cc. The remaining 29% of this volume was contaminated dirt which had an average total specific activity of about  $2 \times 10^{-4}$  uci/g with concentrations down to  $10^{-7}$  uci/g. Under the three tier approach, direct measurements of samples from their waste streams would be required semi-annually to establish and verify scaling factors. The techniques used to quantify many of the isotopes listed in 10 CFR 61, Table 1 for such waste streams do not currently exist. Such measurements and quantifications (even after they can be developed) will be very expensive. Further, such quantification, if it can be done credibly in waste streams such as these would not yield any significant benefits with respect to NRC's performance objectives.

2. During the period referenced above, only about 10% of FPL's radioactive waste volume (approximately 94% of the activity) was process waste (e.g. demineralizer resins, filters). It has been argued for some time that the concentrations of radioisotopes in nuclear plant wastes would be held well below the specified concentrations listed in Table 1 of 10 CFR 61 for each waste class, by the isotope, CS-137. Although this is probably true, there is to our knowledge not a lot of data to substantiate the argument. Consequently some nuclear plant process waste streams may be of concern in meeting the performance objectives being established by NRC. As previously stated, however, nuclear plant waste streams such as these contain a mixture of radioisotopes in a concentrated form. Sampling, separating and measuring techniques do not currently exist for these types of samples. Thus while such waste streams may bear looking at, NRC should provide the industry with a sufficient amount of time to establish a data base from which it could be determined which waste streams and for which radioisotopes it would be justifiable to measure and quantify. Two such efforts are known to be currently underway. The AIF has initiated a project, the objective of which is to establish scaling factors based upon engineering transport models and assumed source terms. In addition, EPRI has initiated a project designed to provide empirical measurements of various waste streams for the purpose of developing the quantification techniques and determining scaling factors for representative nuclear plant wastes. It is estimated that the EPRI project will take two to three years to complete. The AIF project could probably be completed within six months to one year.

FPL is concerned about the additional radiation exposure that will be received by personnel involved in the sampling and intensive analysis of nuclear plant waste streams such as high specific activity resins and filters. As such, we are in complete concurrence with NRC's objectives to limit the number of samples required. We believe the best way to do this would be through the current industry development programs already initiated by AIF and EPRI. The results of those programs will enable industry and NRC to better evaluate the nuclear plant waste streams and limit sampling to those radioisotopes and at frequencies which are compatible with the performance objectives associated with land disposal of radioactive waste.

Based upon the discussions provided above, we urge the Commission to consider the following in their final BTP.

- 1) Delete any requirements to perform any special sampling of nuclear plant wastes which would fall in Class A based upon current techniques for determination of gamma emitting isotopes. Such provisions would not likely compromise NRC's objectives to establish inferred concentrations within a factor of 10 (of the minimum sensitivity)
- 2) Employ the generic classification system discussed on pg 38085 of FR/V0146, Vol142/Friday, July 24, 1981, initially, for Class B stable waste. Provide industry ample time to develop the proper sampling and measuring techniques. In the interim, waste could be moved from Class B to Class A (or visa versa) if data was available to substantiate such the change.

- 3) Evaluate industry data as it becomes available, with respect to NRC's performance objectives, to determine the degree of sampling and quantification required. One consequence of a too conservative approach in quantification techniques could be the premature closure of a burial site; which would be in no one's best interest.
- 4) Evaluate the feasibility of laboratory analysis to identify and quantify all isotopes listed in table 1 and the sensitivity of detection for the various types of wastes generated.