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INSPECTOR'S EVALUATION
INSPECTION REPORT NO. 50-29/74-08
YANKEE NUCLEAR POWER STATION

This inspection revealed that Yankee Rowe has been conducting some radiological monitoring of the environs for the past number of years and since January 1974 had essentially followed the radiological program in its Proposed Environmental Technical Specifications (ETS). Unfortunately, in the nonradiological area almost nothing is being done. That is, the plant has not been monitoring the chemical releases from the plant and has done little in the line of impingement and entrainment studies. The licensee had Aquatic, Inc. perform some temperature studies on the river and review fish catches by fishermen in preparation for the upcoming hearing for a discharge permit. The licensee appears to be willing to wait to see what requirements are going to be imposed in this area and then try to implement them.

The Nuclear Services group, Westboro, appears to be well involved with the environmental programs at each of the Yankee Plants. They have made a number of recommendations for Yankee Rowe, although the plant has not yet acted on them. Specifically, Westboro recommended that (1) Rowe stop bringing environmental samples into the plant to count alpha and beta prior to having Teledyne analyze them. This practice was still being done. The plant H.P. said that if the samples were subsequently lost prior to Teledyne's analysis, at least the preliminary data would be available. The H.P. has been trying to get additional equipment to be used only for these analyses, but was unsuccessful in getting money to do this so far. (2) Westboro had recommended that additional instrumentation to measure wind speed and wind direction be added to the met. tower at the 140 foot level and that a data reduction system be installed to handle the met. data at YNPS. These recommendations were made about 6 months ago and have not yet been acted on by the plant.

In the radiological area YNPS has a number of good practices worth noting here. (1) Yankee Rowe has gone to a 2-inch deep charcoal cartridge for increased organic iodine collection efficiency and is having the collection efficiencies verified on each batch of charcoal. (2) Yankee has been collecting sufficient media from each location such that a portion of it can be stored on site (if not perishible) for future use, reference or replacement if the sample is lost before analysis.

Yankee does have some tendency to accept radiological results from Teledyne at face value. A number of apparent anomalies were pointed out by the inspector during the inspection. A few are listed below as examples: (1) Bi-214 was reported in river water samples from one location in successive months as 270 picocuries/l and 510 picocuries/l, respectively, and yet the gross alpha activity was reported as less than 0.5 picocuries/l. (Bi-214 and two of its short-lived daughter products are alpha emitters.) (2) Ra-226 was reported in vegetation at levels greater than the K-40, yet the gross alpha activity reported was approximately 1/30 of the reported Ra-226 activitites. (3) Air particulates activity concentrations at the control station (13 miles away) were on occasion higher than the concentrations measured in the plant vent stack. (4) Sr-90 in maple syrup was reported as 0.41 picocuries/ml. While I have no evidence otherwise, this level appears very high. (Cs-137 levels were reported as 0.1 picocuries per liter and K-40 at 2.4 picocuries per liter.) If the Sr-90 numbers are valid, maple syrup could be a major pathway for population exposure. (5) Several of the MDA's quoted by Teledyne appear very low for the techniques used. For example, I-131 in milk had a quoted MDA of 0.5 picocuries/l. Yet the contractor uses only a 200 minute beta count time and a 2-liter sample. Regulatory Guide 4.3 uses 1000 minute counts and a 4-liter sample in its example of how to meet the 0.5 ± 25% level.

Following are recommendations that should be forwarded for action:

(1) Get Technicial Specifications for Yankee Rowe.

(2) With respect to the Proposed Technical Specifications and FSAR.

(a) There are several inconsistencies as to how airborne iodine is to be analyzed. This should be clarified.

(b) Sr-89 analyses should be performed on each of the media requiring Sr-90 analyses. The media effected included: air particulates, water, maple syrup, soil sediments, vegetation (terrestrial and aquatic), milk and fish.

(c) The frequency of gross alpha analyses should be locked in, rather than the present case of "when present in the release." The latter often leads to confusion between the licensee and contractor as to what is required. It would be better to state a minimum frequency, if gross alpha analyses are desired.

(d) The licensee currently samples soil and vegetation at eight locations triannually and river sediments at nine locations triannually.

Since soil and [illegible]t samples are expected to show the long term changes of environment[illegible]vity, I would suggest that both the frequency of sampling and [illegible]ber of locations could be reduced, if the licensee desired to [illegible]

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cc: [illegible] Streeter