

DUKE POWER COMPANY

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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APR 17 9:53

April 9, 1984

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Subject: Oconee Nuclear Station
IE Inspection Report 50-269/83-34,
50-270/83-34, and 50-287/83-34

Dear Sir:

By letter dated March 9, 1984, NRC/Region II requested a supplemental response relative to the Duke response of January 6, 1984 to the violation identified in the subject inspection report.

The corrective actions needed to eliminate the cited item of non-compliance with 10 CFR 20.203(e) have been taken; however, after reviewing the bases of your conclusion that unrestricted areas with activities in excess of 10 CFR 20 limits should be posted, we continue to disagree with the interpretation of that regulation and believe that such an interpretation has broad generic implications to the nuclear industry.

Accordingly, Duke is, under separate cover letter, requesting that NRC/ONRR provide an interpretation, pursuant to 10 CFR 20, §20.6, of the requirements relative to this issue. Pending receipt of a response from ONRR, Duke will hold in abeyance any further corrective actions relative to this violation.

Very truly yours,

Hal B. Tucker / g/c

Hal B. Tucker

RLG/php

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Q PDR

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April 25, 1984

30 P12:54

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. John F. Stolz, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

The purpose of this letter is to request an NRC interpretation of the requirements of 10 CFR 20. This request is prompted by a recent IE Inspection and Notice of Violation for the Oconee Nuclear Station. Copies of the pertinent correspondence are attached and the history of the violation is discussed in the following paragraphs. Briefly, NRC Region II has cited Duke Power, Oconee Nuclear Station, for failure to post a pond located in an unrestricted area which contained greater than ten times 10 CFR 20, Appendix C quantities of licensed material. NRC Region II states that the posting requirements of 10 CFR 20.203(e) apply to collective concentrations of low activity, large volume areas, located in unrestricted areas as well as restricted areas. Duke Power disagrees with this interpretation of the regulations.

This apparent violation was found during the course of a routine NRC inspection in November 1983 and was documented in Inspection Report 50-269/83-34, 50-270/83-34 and 50-287/83-34, a copy of which is attached for your convenience. At the time of this violation, the area in question was not within the Oconee restricted area boundary. However, as a result of the 10 CFR 50, Appendix I reviews, it had been determined that it would be included and that the new restricted area boundary would be at the discharge of the pond. All downstream areas would be considered unrestricted areas. (These requirements were to become effective upon issuance of the Appendix I Technical Specifications.) Because of this, Duke originally agreed to post the pond during the period of the inspection.

By License Amendments 125, 125, and 122 dated January 16, 1984, the NRC issued the Appendix I Technical Specifications and fully established the restricted area boundaries as noted above. By letter dated January 6, 1984 (copy attached), Duke provided a response which denied the violation but stated that the area would be posted as it was included in the restricted area boundary as defined by the Appendix I reviews.

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Mr. Harold R. Denton, Director
April 25, 1984
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In response, NRC Region I⁷ stated, in a letter dated March 9, 1984 (copy attached), that they did not agree that areas found above 10 CFR 20 limits in unrestricted areas need not be posted. Rather, they stated that such areas are of even more concern than those in restricted areas and should be posted. Duke agrees with the NRC Region II statement that "If those concentrations are enough of concern to be posted in a restricted area, they are of even more concern in an unrestricted area." However, after further review of the circumstances surrounding this incident, Duke has found that whether the subject pond is located in a restricted or unrestricted area is not the main concern; the main concern is the applicability of the particular federal regulation that was cited as being violated. 10 CFR 20, §20.203(e) reads:

"(e) Additional Requirements. (1) Each area or room in which licensed material is used or stored and which contains any radioactive material (other than natural uranium or thorium) in an amount exceeding 10 times the quantity of such material specified in Appendix C of this part [is required to] be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words: 'Caution, Radioactive Material(s)' or 'Danger, Radioactive Material(s).'"

Sediment core samples from Chemical Treatment Pond Number 3 (CTP3) were tested and their activity was multiplied by the estimated volume (2,200 cubic yards) of the pond sediment and a total activity was calculated. This was the value used to compare to the quantities specified in Appendix C of Part 20. If we are to assume that 20.203(e) applies to the 3.8 million gallon, 88,200 square feet Chemical Treatment Pond Number 3, the "area" would be the pond, more specifically, the pond bottom inventory. "Licensed material" would refer to the pond sediment, a "byproduct" due to the absorption of some of the radioactive material released into the pond water. This sediment would then be considered "stored" at the bottom of CTP3. Using this interpretation, any low activity material, for example, low activity topsoil, defined as a byproduct due to a certain amount of absorption of radioactivity, if taken in a large enough area, may exceed ten times the quantities listed in Appendix C, and would be subject to the posting requirements of 10 CFR 20, §20.203(e). It is our belief that these posting requirements were not intended for low activity radiation spread over a large area, whether in a restricted or non-restricted area. On the contrary, it would seem more logical to believe that the regulation was referring to a more centralized and possibly contained radioactive source in "any room, enclosure, or operating area" (these were areas referenced in 20.203(d) - Airborne Radioactivity Areas).

Section 20.204(a) reads:

"(a) A room or area is not required to be posted with a caution sign because of the presence of a sealed source provided the radiation level twelve inches from the surface of the source container or housing does not exceed five millirem per hour."

If all of the activity in the sediment in CTP3 was concentrated in one spot, at twelve inches above a dried (assuming no water shielding) pond bed, the maximum exposure to an individual at that spot would be 3.8 millirem per hour. Using a more realistic approach, assuming the sediment was uniformly spread over the surface area of the pond (88,200 ft²), at twelve inches above the dried pond bed, the maximum radiation level, which would be found at the pond center, would be less than .001 mrem per hour. The material in this case is not contained in a "sealed source" but is shielded by the water in the pond. Even without the shielding, the radiation level would be considerably less than what is considered the maximum permissible level needed for exemption from posting.

Another reason we believe that 20.203(e) is not applicable in this particular instance is the existence of 10 CFR 20, §20.105 - Permissible levels of radiation in unrestricted areas. The control of radioactive materials and sources should be more restrictive in unrestricted areas than restricted areas due to the lessened degree of licensee control and the higher probability of public exposure; and, Part 20.105 is more restrictive than Part 20.203. Except with Commission Authorization, radiation levels in an unrestricted area cannot exist wherein if an individual were continuously present in that area, a resultant dose for that individual could be in excess of two millirems in any one hour or 100 millirems in any seven consecutive days. The maximum contact dose to someone in the center of the hypothetically dry CTP3 would be less than .002 millirem in one hour. The values measured in CTP3, when collectively taken, meet the criteria of the regulation governing radiation levels in unrestricted areas. Thus, the health and safety of the public are not jeopardized by the existence of this pond and its contents.

Questions were brought up in the March 9, 1984 NRC Region II response as to why the Chemical Treatment Ponds Numbers 1 and 2 were previously posted with radiation warning signs and Chemical Treatment Pond Number 3 was not. There is actual material storage (resin waste to settle out), smearable contamination at the water's edge, and associated measurable dose rate at CTPs 1 and 2. This is not true for CTP3. There had been no earlier justification to posting the pond area in question. The posting criteria for CTPs 1 and 2 did not, and do not now, apply to CTP3.

Mr. Harold R. Denton, Director
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Duke continues to believe that the health and safety of the public is our primary concern. Effluent releases will continue to be monitored and limited so as to comply with 10 CFR 20 regulations, Appendix I regulations, and Oconee Nuclear Station Technical Specifications. In addition, Duke is soon to propose to the NRC an alternate method of disposal of low activity wastes at Oconee which will decrease the activity released to all Chemical Treatment Ponds. All radioactivity releases, no matter how small, are of concern to us, and any unpredictable concentration of radioactivity is our concern whether in a restricted or non-restricted area.

Duke requests, pursuant to 10 CFR 20, §20.6, that the NRC issue an interpretation of 10 CFR 20 with respect to posting of large volume, low activity areas. Duke considers that the NRC Region II interpretation of regulation 20.203(e) is overly conservative and is not within the overall concept of 10 CFR 20. Should the NRC Region II interpretation be held as valid, we believe that it would create generic industry implications and would result in the need for NRC rulemaking to revise 10 CFR 20 to unambiguously state this new requirement.

As this continues to be an open item in that NRC Region II has requested additional corrective actions, an NRC response in a timely manner would be appreciated.

Very truly yours,

H. B. Tucker / BTU

Hal B. Tucker

RLG/JCP/php

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Ms. Helen Nicolaras
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555