

1977

The Honorable Ernest F. Hollings  
United States Senate  
Washington, D. C. 20510

POOR ORIGINAL

Dear Senator Hollings:

Your letter, received February 14, 1977, requested information regarding a recent spill of radioactive water into the Keowee River from the Oconee Nuclear Station which occurred on January 17, 1977.

The licensee reported the matter immediately to our Inspectors from the Region II office in Atlanta, who happened to be at Oconee on other matters at the time. They made a preliminary review of the event on January 18 which disclosed no need for public alarm. Nevertheless, an in-depth investigation into the facts surrounding the spill was conducted the following week and completed on January 28, 1977. Commitments for immediate corrective action to prevent recurrence were obtained from Duke Power Company on February 1.

While our investigation results indicate the spill to have an insignificantly small effect on public health, we believe it was avoidable and that steps should have been taken by the plant staff to reduce the release once it had been detected.

As with all matters of this type, the NRC reviews the aspects of each event to determine appropriate enforcement action. The evaluative effort is now in progress. When the investigation report and evaluation are complete a copy will be forwarded to you. For your use in the interim, we have enclosed a brief summary of actions taken to date.

Your interest in this matter is appreciated. Please let me know if I can be of further assistance.

Sincerely,

W. J. ...  
Director

OCA EDO

Enclosures: <sup>MJ</sup> BWeiss 3/16/77  
(See next page)

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OFFICE	FCB	FCB.C	DFO	OELD	DD:IE	D:IE
SURNAME	GCGower j.	GWRoy 3/15/77	DThompson	JPMurray	JGDavis	Evolgenau
DATE	3/X/77	3/X/77	3/X/77	3/X/77	3/17/77	3/17/77

Enclosures:

1. Ltr fm "People for a Clean Environment" to Sen Hollings dtd 2/7/77
2. Summary of Inspec. Activities w/atts (3).

Distribution:

L. V. Gossick, EDO  
W. J. Dircks, EDO  
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J. G. Davis, DDIE  
L. N. Underwood, IE  
G. Ertter (EDO-1501)  
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ELD Central Files  
IE Reading Files  
EDO Reading Files  
OCA (3) w/inc.

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## Attachment

### Summary of Event and Inspection Activities Oconee Unplanned Release of Contaminated Water

January 17, 1977

The Oconee Unit 1 Reactor was shut down on January 15, 1977, for repair of a steam generator tube leak. This repair was necessary because small amounts of water containing radioactive materials consisting principally of Iodine 131, were leaking from the primary coolant system into the secondary coolant system and contaminating the water in the secondary system. During a test on the shut down unit on the evening of January 17, 1977, contaminated secondary coolant leaked to a turbine building sump through a broken gasket. The contents of the sump, which are not normally contaminated, were automatically pumped to a pond outside the plant. The pond overflowed into the Keowee River.

Two inspectors from the Nuclear Regulatory Commission (NRC) Region II (Atlanta) were on site and began looking into this event on January 18, 1977. Specific information on the released quantities was obtained and evaluated by radiation specialists in the Atlanta office. The Keowee River is the source of potable water for the town of Clemson, South Carolina and the Clemson University and NRC wanted to be sure there was no danger to the public. The evaluation revealed that even though the instantaneous release rate specified in the plant operating license had been exceeded briefly, the released contaminated water, when mixed with 3.5 billion gallons of water flowing into the Keowee River, resulted in an average Iodine 131 concentration in the river water very much lower (at least a factor of 10) than the average annual concentration permitted by rigorous NRC standards set for the protection of the public. Based upon this evaluation, it did not appear that there was any significant public health hazard or need to alert the public.

As a precautionary measure, on January 19, the NRC Region II office notified the Department of Health and Environmental Control, State of South Carolina, and suggested they obtain water samples from the Keowee River for analysis. Duke Power Company also took water samples for the same purpose at several locations downstream from the release point. On January 24, the State, having taken samples including samples near Clemson, South Carolina, reported to the Region II office that their water analyses had confirmed the initial evaluation. Peak contamination levels were reported by the State to be about a factor of 25 below the permissible average annual concentration. Water sample results reported by Duke Power Company were consistent with the results reported by the State. Having confirmed the initial evaluation (that the release would have an insignificant impact upon public health), there still appeared to be no need to alert the public. The situation at the time, (1/24/77) also did not indicate any heightened public concern to the point where a public announcement was needed to inform or clarify matters.

Even though the release was insignificant from the public health perspective, certain aspects of the licensee's effluent control practices were reviewed in depth by Region II radiation specialists. This investigation, which was completed on January 28, indicated the need for corrective action to minimize recurrence. Commitments for immediate corrective action were obtained from senior Duke Power Company (DPC) management and documented in a letter to DPC on February 1, 1977 (copy attached).

Information received from DPC and other State sources indicated increasing public concern about the release. Accordingly, NRC issued a public announcement on February 2, 1977. DPC also issued a press release on that date. Copies of both press releases are attached.

On February 4, 1977, at NRC's request, representatives of DPC met with the Region II staff in Atlanta. During this meeting NRC representatives expressed concern about an apparent weakness in DPC's management system which allowed this release to occur. Duke representatives were informed that in NRC's view the release was avoidable, and that the plant staff did not do all that it should have done to reduce the amount of radioactivity released to the environment. Duke representatives were responsive. They discussed action already taken and indicated a willingness to take further corrective action to prevent recurrence of such events.

Following the news releases on February 2, the NRC Office of Public Affairs reported extensive media coverage of the event in the Clemson area and nearby cities. The DPC office in Clemson was picketed. About 200 citizens met with DPC officials on February 15, 1977. Members of the NRC Region II staff attended this meeting along with representatives from the U.S. Environmental Protection Agency (EPA), and the State of South Carolina. During this meeting DPC stated that in order to relieve public concern about prompt reporting to the public of such events, DPC would henceforth make prompt public announcements whenever radioactive liquid release limits had been exceeded.

It has been estimated that this event could result in no more than a 0.5 millirem thyroid dose to individuals drinking Clemson water. For the purpose of perspective, 0.5 millirem may be compared to EPA's new Fuel Cycle Standard which limits individual thyroid doses to 75 millirems per year (40 CFR 190) and to the current Federal Radiation Council guidance value of 1,500 millirems per year to the thyroid. Additional perspective can be obtained by comparing 0.5 millirem to the whole body dose of about 100 millirems per year caused by exposure to naturally occurring background radiation.

Regardless of the low magnitude of the incremental dose to members of the public, the NRC will require DPC to take effective action to minimize the possibility of additional unplanned releases in order to keep individual and general population doses as low as reasonably achievable.

As with all cases of this type, the NRC reviews the aspects of each event to determine appropriate enforcement action. This evaluation effort is now in progress. Evaluations of this type include consideration of the significance of the event and associated noncompliance with NRC requirements, as well as the licensee's previous compliance history. Sanctions available to the NRC include notices of violations, civil monetary penalties, and orders for modification, suspension or revocation of the license.

Copies of NPC inspection reports, enforcement correspondence, and DPC's responses are routinely made available for review by the public in the Oconee Public Library at Walhalla, South Carolina.

Attachments:

1. Ltr to W. O. Parker, DPC  
fm N. C. Moseley, NRC  
Region II, dtd 2/1/77
2. NRC Press Release -  
No. II-77-07 dtd 2/2/77,  
DPC to Limit Radioactive  
Discharges into Keowee River  
at Oconee
3. DPC Press Release to K. Clark,  
NRC Region II, dtd 2/2/77