JUL 3 1978

MEMORANDUM FOR: Files

FROM: Owen Thompson, Geotechnical Engineer
Geotechnical Engineering Section, Geosciences Branch, DSE

THRU: J. Carl Stepp, Chief, Geosciences Branch, DSE
Lyman W. Heller, Leader, Geotechnical Engineering Section, Geosciences Branch, DSE

SUBJECT: SEEPAGE AT JOCASSEE DAM

PLANT NAME: Oconee Nuclear Station/Jocassee Dam
DOCKET NUMBER: 50-269/270/287
RESPONSIBLE BRANCH: OR-1; Morton Fairtile, PM

In May 1978, NRC (M. Fairtile) was contacted by telephone and advised of a change in the seepage conditions at Jocassee Dam.

On June 12, 1978, Mr. Frank Jape, Inspector, I&E Region 2 was contacted while on visit to the Oconee Nuclear Station for an unrelated matter. After investigation, Mr. Jape informed us that the Federal Power Commission (FPC) had been following developments closely, and that FPC could provide details.

On June 13, 1978, Mr. Fishman, FPC Regional Office Atlanta, Georgia (404-881-4134) was contacted by Owen Thompson, Geosciences Branch. The telephone discussion is summarized as follows.

In mid May 1978, FPC was contacted by the Jocassee Dam Superintendent and informed that there was a change in the seepage characteristics through the west abutment. The quantity of seepage had not changed significantly from the previous steady rate of about 1000 GPM, and may have decreased slightly. However, the turbidity of the water had increased significantly and a small portion of an abandoned haul road had caved in.

The FPC immediately dispatched an inspector to the site and he remained there for many days. The Jocassee Reservoir was lowered 14.5 feet and the Keowee Reservoir was lowered 3.5 feet as emergency precautions. The

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operator, Duke Power Company (Duke), undertook an investigation of the problem. Test holes were excavated and the shallow overburden soil layer was removed to expose weathered rock. The water flowing through the rock was found to be clear and free of fines. Mr. Fishman stated that the turbidity was clearly not caused by piping or backward erosion in the weathered rock abutment, but was due to surface erosion of the thin blanket of soil.

Mr. Fishman stated that the FPC was satisfied that the seepage does not compromise the safety of the dam at this time. Thus, the water levels in the reservoirs have been permitted to return to normal.

Duke reportedly has retained Law Engineering and Testing Company (Letco) personnel Mr. George Sowers and Mr. Clay Sams as consultants to evaluate the problem and to suggest remedial measures. Mr. Fishman indicated that it is also Duke's opinion that the seepage does not compromise embankment safety but the loss of water is an economic concern. Duke proposes to complete the investigation and probably to undertake some grouting.

Representatives from Duke, FPC and Letco are to meet on July 10, 1978 at 12:30 p.m. at Jocassee Dam to review the status of the investigation and the proposed corrective measures. The NRC Project Manager has informed Duke that NRC will also attend. The NRC representative is expected to be O. O. Thompson, Geosciences Branch, DSE.

A report of the investigation and corrective measures is expected at the end of July 1978. The NRC will receive copies.

Based on the information provided by FPC, the NRC staff has determined that there appears to be no immediate safety hazard with respect to Jocassee Dam and further action by the staff can be properly delayed until the July 10 meeting.

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