

MAR 17 1977

MEMORANDUM FOR: K. R. Goller, Assistant Director for Operating Reactors,
 Division of Operating Reactors

FROM: D. G. Eisenhut, Assistant Director for Operational
 Technology, Division of Operating Reactors

SUBJECT: OCONEE UNIT NOS. 1, 2 & 3 STEAM GENERATOR TUBE INTEGRITY

50-269

As an outcome of the meeting between NRC staff and Duke Power and their NSSS, B&W, on February 15, 1977 the Engineering Branch, Division of Operating Reactors, has identified several issues related to the integrity of Oconee Steam Generators. These issues are listed in the attachment. We previously provided a preliminary list of questions, essentially identical to the attached list, to J. D. Neighbors, ORPM for the Oconee Station. An informal partial response was recently submitted by the licensee.

We suggest that the new list be formally transmitted to the licensee.

3. Due to failure in all units at nearly the same point in time, any change in operating procedures or other possible incidents

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DATE	3/15/77	3/15/77	3/16/77	3/17/77		

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REQUEST FOR INFORMATION RELATED TO OCONEE

STEAM GENERATORS

ENGINEERING BRANCH

DIVISION OF OPERATING REACTORS

1. It was stated that defective and plugged tubes, were stabilized down to the top support plate if the defect was found near the top tube sheet. Assess the consequence of possible failures of these defective tubes at lower or un-stablized sections.
2. Provide a re-evaluation of past ECT records to show whether or not there were tube defects that might have led to initiation of tube cracking.
3. Due to failure in all units at nearly the same point in time, indicate any change in operating procedures or other possible incidents that might have led to tube failures in Oconee steam generators.
4. Indicate any plan to perform ECT examinations of periphery tubes.
5. Provide analytical calculations and/or tests to justify that the crack length, in the circumferential directions, associated with the proposed leakage rate will not increase in an unstable fashion under normal operating and accident conditions.
6. During the recent meeting with the NRC staff, it was indicated that there is 0.4% sulphur content in the sediment deposits. Provide an assessment on the effect of the high sulphur content to the tubes in terms of possible chemical reactions.
7. Provide the micro-hardness test results of both virgin and cracked tubes to determine any evidence of plastic cyclic straining that may initiate the cracks.

8. Provide accident consequence analyses assuming:
 - (a) A certain number of tube failures, that can be tolerated, concurrent with a LOCA.
 - (b) The equivalent number of tubes failures that can be tolerated during a MSLB in terms of off site dosage.

9. Provide analytical and/or test data to assure tube integrity by demonstrating the capability of degraded tubes (circumferentially partial cracked tubes) to withstand accident induced loads. NRC's positions on this matter were delineated in Regulatory Guide 1.121 which was published for comment in August, 1976.

10. Indicate B&W's on-going and planned future programs associated with tube failure, i.e., tests on mechanical strengths and fatigue strengths of degraded tubes.