UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REGARDING PROPOSED CHANGE IN NOZZLE INSPECTION SCHEDULE

FOR

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

DOCKET NO. 50-425

1.0 INTRODUCTION

By letter dated March 17, 1992, Georgia Power Company (GPC) submitted to the NRC notification of a pending change to the examination schedule for Class 1 nozzles at Vogtle Electric Generating Plant, Unit 2 (VEGP-2). The change involves rescheduling the examinations of the reactor vessel outlet nozzles, as documented in the current revision of the VEGP-2 Inservice Inspection Plan, from the first period of the first 10-year interval to the third period of the interval. GPC gives as a basis for the change ASME Section XI Code Interpretation XI-1-86-74, which relates to the general application of examination scheduling requirements.

The reactor vessel outlet nozzles are remotely inspected by means of an automated inspection tool. The inspection tool is also used to examine nozzle-to-safe-end (dissimilar metal) welds in conjunction with the nozzle-to-vessel weld and nozzle inner radius examinations. This industry standard practice is in accordance with the ASME Code. Therefore, the rescheduling of reactor vessel nozzle examinations, as proposed by GPC, would also result in postponement of required nozzle-to-safe-end weld examinations to the last period of the interval.

2.0 EVALUATION

GPC has previously submitted to the NRC, and has been granted in a Safety Evaluation Report dated December 17, 1991, several requests for relief concerning large-bore, Class 1 nozzle examinations at VEGP-2. Relief request RR-15 concerns the pressurizer surge nozzle-to-vessel weld and nozzle inner radius examinations. Because of the pressurizer surge nozzle design, and interferences associated with heater well couplings, no inner radius examinations and a very limited nozzle-to-shell weld examination will be performed. In addition, VEGP-2 primary steam generator nozzles are integrally cast, i.e., no nozzle-to-vessel welds are present, and relief request RR-42 allows visual inspection of the clad surface of the nozzle inner radius areas in lieu of Code-required volumetric examination due to component geometry and material characteristics.

Essentially, therefore, the only primary large-bore nozzles currently scheduled for full volumetric examination in the near-term at VEGP-2 are the reactor vessel outlet nozzles. Other small-bore nozzles (pressurizer spray, etc.) are also scheduled for examination in the first inspection period.

The detection of service-induced degradation is the fundamental basis for Code examination requirements. Included in the Code are provisions for representative sampling and hierarchical examination criteria; these provisions vary with a component's overall contribution to plant safety. Class 1 nozzle welds represent not only a structural discontinuity, but a region of relativity high primary system stresses. Early detection of generic service-induced degradation in these areas is essential for the continued safe operation of the plant. For these reasons, it is important for representative examinations of Class 1 nozzle welds to be performed following initial plant operating cycles.

3.0 CONCLUSION

The GPC proposed scheduling change for VEGP-2 reactor vessel nozzle examinations from the first period in the first interval to the third period in the interval violates the premise of representative sampling for inservice flaw detection during early plant life. The limited amount of inspections of primary large-bore nozzles proposed for VEGP-2 and the stated deferral of dissimilar metal nozzle-to-safe-end welds contribute to this evaluation. This finding is not mitigated by the first period examinations scheduled to be performed on VEGP-2 small-bore primary nozzle welds. Inservice operating and environmental conditions may differ for large- and small-bore nozzles on different primary system vessels. To consider them equivalent for examination purposes is not consistent with underlying Code sampling philosophy.

As previously stated, GPC cited Code Interpretation XI-1-86-74 as justification for the rescheduling of reactor vessel nozzle examinations. This interpretation was not used as a basis for the staff's evaluation. Furthermore, it is the staff's opinion that Code Interpretation XI-1-86-74, and subsequent revisions to the Code in Paragraph IWB-2412, exist only to clarify general completion percentage requirements listed in Table IWB-2412-1, and not to imply that the examination extent or schedule for all Items in each Category of Table IWB-2500-1 may be combined. This opinion is supported by the abundance of detailed and specific requirements for separate Items, as given in each Category of IWB-2500-1.

Based on the discussion above, the staff concludes that the GPC notice of change in scheduling of VEGP-2 reactor vessel nozzle weld examinations from the first to third period of the first 10-year interval is not acceptable and should not be implemented.

cc:
Mr. J. A. Bailey
Manager - Licensing
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Mr. W. B. Shipman
General Manager, Vogtle Electric
Generating Plant
P. O. Box 1600
Waynesboro, Georgia 30830

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW., Suite 2900
Atlanta, Georgia 30323

Office of Planning and Budget
Room 615B
270 Washington Street, SW.
Atlanta, Georgia 30334

Mr. C. K. McCoy
Vice President - Nuclear
Vogtle Project
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Mr. R. P. McDonald
Executive Vice President -
Nuclear Operations
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Office of the County Commissioner
Burke County Commission
Waynesboro, Georgia 30830

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE. Suite 1252
Atlanta, Georgia 30334

Attorney General
Law Department
132 Judicial Building
Atlanta, Georgia 30334

Mr. Alan R. Herdt
Project Branch #3
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW. Suite 2900
Atlanta, Georgia 30323

Mr. Dan H. Smith, Vice President
Power Supply Operations
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, Georgia 30085-1349

Charles A. Patrizia, Esquire
Paul, Hastings, Janofsky & Walker
12th Floor
1050 Connecticut Avenue, NW.
Washington, DC 20036

Art Domby, Esquire
Troutman, Sanders, Lockerman
and Ashmore
127 Peachtree Street
Atlanta, Georgia 30303-1810

Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 572
Waynesboro, Georgia 30830

RELIEF REQUEST LETTER DATED: July 30, 1992
VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

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