Docket Nos.: 50-424 LCV-1608-C
50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Ladies and Gentlemen:

Vogtle Electric Generating Plant – Units 1 and 2
60–Day Response to NRC Bulletin 2002-01 Item 3

Pursuant to the provisions of 10 CFR 50.54(f), Southern Nuclear Operating Company (SNC) hereby submits the enclosed information in response to Item 3 of Nuclear Regulatory Commission (NRC) Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," for Vogtle Electric Generating Plant (VEGP) Units 1 and 2. This information addresses corrosion concerns associated with the remainder of the reactor coolant pressure boundary, excluding the reactor pressure vessel head, attributable to leakage of primary coolant.

Mr. J. B. Beasley, Jr. states that he is a Vice President of SNC and is authorized to execute this oath on behalf of SNC and that, to the best of his knowledge and belief, the facts set forth in this letter are true.

Please contact this office if there are any questions.

Sincerely,

J. B. Beasley, Jr.

Sworn to and subscribed before me this _____ day of _____ 2002.

_____
Notary Public

My Commission expires: _____

JBB/BHW

Enclosure

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser
Mr. M. Sheibani
SNC Document Management

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. F. Rinaldi, Licensing Project Manager, NRR
Mr. J. Zeiler, Senior Resident Inspector, Vogtle

Enclosure

Vogtle Electric Generating Plant – Units 1 and 2
Response to NRC Bulletin 2002-01 Item 3

The information required by NRC Bulletin 2002-01 Item 3 relating to the remainder of the reactor coolant pressure boundary, excluding the reactor pressure vessel head, is provided below:

Required Information
The basis for concluding that your boric acid inspection program is providing reasonable assurance of compliance with the regulatory requirements discussed in Generic Letter (GL) 88-05 and this bulletin. If a documented basis does not exist, provide your plans, if any, for a review of your programs.

SNC Response
Southern Nuclear Operating Company (SNC) is a participant of the EPRI Materials Reliability Project (MRP), and as such, has relied upon the guidance they have provided to address NRC Bulletin 2002-01 Item 3. Vogtle Electric Generating Plant (VEGP) has reasonable assurance of compliance with the regulatory requirements discussed in GL 88-05 and NRC Bulletin 2002-01.

Program Definition and Responsibility
The boric acid inspection program developed in response to GL 88-05 is formalized by procedures including a procedure for performing a containment general inspection to identify leaks or boric acid accumulations, a procedure for performing ASME Section XI leak inspections of the reactor coolant system (RCS), and guidance procedures for performing visual inspections, corrosion assessments, and implementing corrective actions. The primary responsibility for ensuring completion of the containment general inspection rests with the Operations department, whereas the primary responsibility for conducting the ASME XI leak inspections rests with the Engineering Support department.

Inspection Scope and Frequency/Obstructions to Visual Inspections
The containment general inspection is performed as early as practical during every refueling outage, and at the discretion of the Operation department, during any shutdown that lasts longer than 72 hours. This inspection includes a general inspection of all areas of containment observing for evidence of leakage. Evidence of leakage includes leakage through insulation, from valve packing, flanges, or flow orifices, and boron crystal formations on these components or on surrounding floor areas. In addition, specific instructions are included for inspecting certain components including the pressurizer, reactor coolant pumps (RCP), safety injection loop check valves, and the reactor pressure vessel (RPV) head area.

The ASME Section XI leak inspection includes inspection of all Class 1 components and piping and is performed after nominal operating pressure and temperature has been achieved prior to startup from each refueling outage. This inspection includes a thorough visual inspection of the entire RCS, out to the second closed boundary valve. Since this inspection is performed with insulation installed, an additional visual inspection of RCS

bolted connections is performed at ambient pressure and temperature conditions with the insulation removed earlier during the outage as allowed by Inservice Inspection (ISI) Program Relief Request RR-26.

The inspection program for the individual carbon steel Class 1 RCS components is summarized below:

- The RPV bottom head cannot be observed directly due to the "boxed-in" metal reflective insulation surrounding it. Since the insulation is not form-fitted against the RPV bottom head, any accumulation of boron would fall onto the insulation below.

- The upper head of the pressurizer has several potential leakage points. These include the four nozzle-to-safe end welds (Alloy 600 welds) and several bolted connections consisting of the pressurizer manway and the two sets of bolted connections for each pressurizer safety valve. The insulation is removed from the manway cover every refueling outage for the inspection of the manway bolts. Also, the pressurizer safety valves are replaced every refueling outage. Personnel performing these functions inspect for boron accumulations. In addition to the visual examinations performed every refueling outage, various portions of the insulation on the top of the pressurizer are removed during each ten-year ISI interval to support nondestructive examinations.

- Two J-groove Alloy 600 instrumentation nozzles are located on the shell of the pressurizer. Any accumulation of boron would be observed during the visual examinations performed as part of the containment general inspection.

- The bottom head of the pressurizer consists of the surge nozzle as well as heater penetrations. The insulation is blanket insulation and is form-fitted to the bottom head. The pressurizer bottom area around the heater penetrations is inspected every refueling outage; therefore, any leakage from a heater penetration should be able to be seen. In addition to the visual examinations performed every refueling outage, the pressurizer surge nozzle insulation is removed during each ten-year ISI interval for nondestructive examinations.

- The only piping associated with the steam generators carrying borated fluid is the RCS loop piping. This piping and the hot and cold leg manways in the Class 1 channel head provide the only pathway for boron. In addition to the visual examinations performed every refueling outage, insulation is removed from the manway covers to facilitate eddy current testing on two steam generators each refueling outage. The manway insulation on the remaining two steam generators is also removed in order to perform bolt inspection.

- In addition to the visual examinations performed on the RCP bolting every refueling outage, ASME Section XI examination (VT-1) of the seal water housing bolts and ultrasonic testing of the flange bolting are performed as required.

Training

Personnel that perform GL 88-05 inspections are formally trained in the requirements of the program. The aspects of the program that are specifically addressed in the training include: which systems contain boric acid, the characteristics of boric acid, how and where to inspect for boric acid leakage, the corrosive nature of boric acid on carbon steel components, related industry events, and leakage prevention techniques. Persons performing ASME Section XI visual inspections are VT-2 qualified.

Response to Leakage

There are specific technical specification requirements for RCS operational leakage, RCS pressure isolation valve leakage, and RCS leakage detection instrumentation. These requirements ensure that unidentified leakage is maintained sufficiently low to permit identification of new leaks at an early stage. If RCS leakage or boric acid residue is discovered, a report is generated which identifies the location, source, and form of the boric acid deposits. An evaluation is performed to determine the path taken by the fluid. If necessary, additional insulation is removed so that the affected surfaces can be properly inspected. The boric acid residue is removed, as necessary, and the condition of surface material is assessed. The evaluator then makes a determination if general corrosion or degradation has occurred. Finally, as necessary, repairs are made for cosmetic or precautionary reasons.

Review of Program Effectiveness

The VEGP leakage and corrosion assessment programs consist of several plant administrative procedures and numerous implementing procedures. These procedures are intended to address numerous concerns associated with system leakage including GL 88-05. Responsibility for these programs and policies centers primarily in the Operations and Engineering Support departments. Management review and oversight of these programs is provided in many ways including:

- Safety Audit and Engineering Review (SAER) Periodic Audits
- Management Internal Assessment Reports
- Condition Reporting and Tracking System

Audits of ISI and Inservice Testing (IST) procedures are conducted routinely by SAER. The ISI audit is a yearly requirement. Leakage assessment is an element of the ISI audit that is evaluated periodically, but not necessarily performed during every ISI audit. The Engineering Support department routinely prepares Management Internal Assessment reports in areas of their responsibility which include the ISI and IST, leakage assessment, and boric acid corrosion assessment programs. Condition reports are generated to document significant degradation of permanent plant equipment due to corrosion.

In general, VEGP routinely compares performance of its programs with those of the other SNC plants. The VEGP leakage assessment program has evolved over the years subsequent to the issuance of GL 88-05 due to its own experiences and through incorporation of other plants' experiences by review of NRC notices and industry reports.