Dave Morey
Vice President
Farley Project

Southern Nuclear
Operating Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.5131

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

Joseph M. Farley Nuclear Plant
60-Day Response to NRC Bulletin 2002-01
Reactor Pressure Vessel Head Degradation and
Reactor Coolant Pressure Boundary Integrity

Ladies and Gentlemen:

In accordance with 10 CFR 50.54(f) and pursuant to the requirements of Nuclear Regulatory Commission (NRC) Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," Southern Nuclear Operating Company (SNC) hereby submits the enclosed information for Farley Nuclear Plant (FNP) - Units 1 and 2. This information, submitted in fulfillment of the 60-day response requirement of Bulletin Item 3, describes FNP's boric acid inspection program for the remainder of the reactor coolant pressure boundary.

This letter contains no new NRC commitments. If you have any questions, please advise.

Mr. D. N. Morey states he is Vice President of Southern Nuclear Operating Company and is authorized to execute this oath on behalf of Southern Nuclear Operating Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

D N Morey

Dave Morey

Sworn to and subscribed before me this 16th *day of* May, *2002.*

Gloria H. Bui
Notary Public

My commission expires: June 7, 2005

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DWD/sdl: Bulletin 2002-01 60-day response1.doc

Enclosure: Farley Nuclear Plant - Units 1 and 2
Response to NRC Bulletin 2002-01 Item 3

cc: Southern Nuclear Operating Company
Mr. D. E. Grissette, Nuclear Plant General Manager - Farley

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. F. Rinaldi, NRR Project Manager - Farley

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. T. P. Johnson, Senior Resident Inspector - Farley

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Provided below is the Farley Nuclear Plant (FNP) response for Item 3 of Nuclear Regulatory Commission (NRC) Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," dated March 18, 2002.

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 in the Electric Power Research Institute (EPRI) Material Reliability Project (MRP) and has applied the guidance provided by the MRP in reviewing the FNP boric acid inspection program. Key elements of the FNP program are summarized below.

Program Definition and Responsibility
The boric acid inspection program developed in response to GL 88-05 is formalized through the FNP Inservice Inspection (ISI) Program and various 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, while responsibility for the ASME XI leak inspections is shared between the Engineering Support and Maintenance Departments.

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 Operations Department during other shutdowns. This inspection includes a general inspection of all areas of containment for evidence of leakage such as boric acid residue. Items inspected for evidence of leakage include insulation, bolted connections, valve packing, flanges, flow orifices and surrounding floor areas. These walkdowns include the reactor pressure vessel, pressurizer, reactor coolant pumps, steam generators and associated piping.

The ASME Section XI leak inspection includes all accessible Class 1 components and piping and is performed by certified Level II or III visual examination personnel after nominal operating pressure and temperature have been achieved prior to startup from each refueling outage. Since this inspection is performed with insulation installed, additional visual inspections are performed during the outage in accordance with the ISI program and applicable relief requests.

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

- Visual examinations of the RPV main loop nozzles and the condition of surrounding areas are performed early in each outage with the insulation in place.

- The FNP inspection program does not require visual examination of the RPV bottom head. This area cannot be observed directly due to the "boxed-in" metal reflective insulation surrounding it. Since the insulation is not form-fitted against the head any accumulation of boron would be free to fall away from the head surface onto the insulation below.

- The upper head of the pressurizer is encased in metal reflective insulation and has several potential leakage points, including the nozzle-to-safe end welds (Alloy 600 welds) and the bolted connections for the pressurizer manway and pressurizer safety valves. During each refueling outage insulation is removed for inspection of the manway cover bolts and for replacement of a pressurizer safety valve. Any significant boron accumulation would be observable to the personnel performing these functions. 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 of the nozzles.

- The pressurizer shell is encased in metal reflective insulation and penetrated by several J-groove Alloy 600 instrumentation nozzles. Any significant boron accumulation would be observable during the visual examinations performed as part of the containment general inspection and pre-startup leakage tests.

- The bottom head of the pressurizer is encased in metal reflective insulation which is form-fitted to the head and surge nozzle but contains holes to accommodate the heater penetrations. The pressurizer bottom area around the heater penetrations is inspected every refueling outage. Since the insulation holes are much larger than the heater penetrations, any indication of leakage from a penetration should be observable. 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 that carries borated fluid is the RCS loop piping. This piping and the hot and cold leg primary side manways in the Class 1 channel heads provide the only pathway for potential boric acid leakage. The insulation is removed from the primary side manways at each outage in order to perform bolt inspection.

- ASME Section XI examinations (VT-1) of the reactor coolant pump (RCP) seal water housing bolts and ultrasonic testing of the flange bolting are performed as required.

Training
Personnel who perform inspections are trained on 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. Personnel performing ASME Section XI visual inspections are VT-2 certified.

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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. When leaks are indicated by RCS leakage monitoring or by discovery of boric acid residue, a report is generated which identifies the location, source, and form of the boric acid deposits. 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, repairs are made when determined necessary.

Review of Program Effectiveness
The FNP 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 resides within the Operations, Maintenance 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
- Comprehensive Outage Reports
- 90-Day ISI Reports
- Plant Operations Review Committee (PORC) review of ISI Program changes
- 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. Outage and ISI reports document program activities while condition reports specifically document degradation of plant equipment due to corrosion. The FNP leakage assessment program has evolved over the years subsequent to the issuance of GL 88-05 and NUREG/CR-5576 due to FNP's own experiences and through incorporation of other plants' experiences by review of NRC notices and industry reports.

Conclusion

SNC has reviewed the procedures and manuals which form the documented basis of the FNP boric acid inspection program with regard to the regulatory requirements discussed in GL 88-05 and NRC Bulletin 2002-01, and in consideration of the industry experience reported in NUREG/CR-5576. As a result of this review SNC believes there is reasonable assurance that the current FNP boric acid inspection program is in compliance with the applicable regulatory requirements and is effective in identifying, assessing and controlling boric acid corrosion.