

BAS C-111

U.S. NRC  
In re DAVID GEISEN GEISEN Exhibit # 1  
Docket # 1A-05-052

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Date: 12/10, 2008 (Tr. p. 1534)

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cc:

Subject: MRP Draft Response

Date: 8/8/2001 11:34:571010

----- Forwarded by Frank W. Kennedy/TE/FirstEnergy on 08/08/2001 11:32 AM -----

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08/08/2001 10:59 AM

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Subject: MR  
P Draft Response

Our comments are in bold letters. There are 2 comments. One relates to the correct date of the past inspection. The other one relates to the future inspection plans. In JULY of this year your Mark Fleming asked us for the plant specific data verification for the last inspection. We sent him a fax on 7/16/01 stating that the last inspection was partial and detected boric acid accumulation which was attributed to a CRDM flange leak.

DOCKETED  
USNRC

September 9, 2009 (11:00am)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

S14D-05674



NRC008-0326

TEMPLATE = SECF 028

DS 02

**Job Name:**

**MORGAN\_80957\_CD03\_ROD\_COOK\_NOTES**

**Internal Unique ID:**

**055**

**File Path:**

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**S14D-05675**

**NRC008-0327**

Draft Template Responses to NRC Bulletin 2001-01

The following is a first draft of proposed responses to NRC Bulletin 2001-01. The responses will be supported by a technical report describing the integrated approach and providing supporting information. The draft of this report will be available for review later this week or early next week. The technical case being developed focuses on the fact that, with one exception (Robinson 2), the 14 highest ranked plants (less than 6.6 EFPY relative to Oconee 3), have specified maximum interference fits less than 0.0015" and access to the top of the vessel head by some means for bare-metal inspections. The 0.0015" maximum interference is significant since leakage has been confirmed from three nozzles at Oconee 2 with a measured fit of 0.0014" at one end of the interference fit region.

These top 14 plants plus Cook 2, which had a cracked CRDM nozzle, are dispositioned in the following manner:

- Oconee 3, North Anna 1, Surry 1, TMI-1, Crystal River 3 and Turkey Point 3 will be performing qualified vessel top head inspections during the fall 2001 outage.
- Oconee 1, Oconee 2 and ANO-1 have just completed outages where leakage was confirmed and leaking nozzles repaired. The inspection scope at Oconee 1 was expanded to cover some non-leaking nozzles, and no significant cracking was reported.
- Davis-Besse completed a top head visual inspection in March 2001 (**SHOULD BE APRIL 2000**) with no leakage reported.
- North Anna 2 and Surry 2 are effectively sister plants, but with less time at temperature, to North Anna 1 and Surry 1 which will be inspecting this fall. These vessels were all completed by Rotterdam Dockyard. The plants to be inspected this fall have materials supplied by Sandvik and Huntington Alloys. North Anna 2 has Sandvik material, and Surry 2 has both Sandvik and B&W Tubular Products material.
- Turkey Point 4 is a sister plant to Turkey Point 3 with less time at temperature.
- Robinson 2 (with a 0.003" max specified interference) performed a bare-metal visual inspection during the spring 2001 outage. The potential effect of the tighter 0.003" maximum specified interference fit on leakage detection is being assessed by the utility.
- Cook 2 (with a 0.004" max specified interference) is performing ID and OD surface ECT inspection of wetted surfaces of all nozzles for the presence of significant cracks. The absence of significant cracks would indicate no leaks.

Draft Template

Plant is participating in the MRP integrated response to NRC Bulletin 2001-01, *Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles*. The integrated response is described in MRP-???, *Integrated Industry Response to NRC Bulletin 2001-01*. MRP-??? provides background information on all PWR plants, rankings of the plants relative to Oconee 3 based on the time-at-temperature model, inspections for each category of plants recommended by the MRP, the basis for the recommended inspections meeting applicable regulatory requirements, and references to previous MRP submittals containing supporting information.

The following is a summary of the response for Plant, and supplemental information not included in the integrated program.

1. Requested Background Information

a. Plant Specific PWSCC Susceptibility Ranking

Plant has been analyzed for susceptibility relative to Oconee 3 using the time-at-temperature model and plant-specific input data reported in MRP-???

This evaluation showed that it will take Plant ?? EFPYs of additional operation from March 1, 2001, to reach the same time-at-temperature as Oconee 3 at the time that leaking nozzles were discovered in March 2001.

Plant falls into the NRC category of plants [*with known leaks or cracks, within 5 EFPY of Oconee 3, greater than 5 EFPY and less than 30 EFPY relative to Oconee 3, with low susceptibility*].

*Provide additional supporting information if applicable and desired.*

b. Description of VHP Nozzles

Plant has ?? RPV head nozzles. The head arrangement and requested nozzle details are provided in Table ?? of MRP-????.

c. Description of RPV Head Insulation

As reported in Table ?? of MRP-???, Plant has [*reflective horizontal, reflective stepped, blanket contoured, block contoured, encapsulated contoured*] vessel head insulation.

*Provide a description, and photograph if possible, of the vessel head insulation. If there are particular issues such as asbestos, riveted metal, or epoxy, that would complicate visual inspections, then these factors should be described in detail.*

- d. Description of RPV Head and Nozzle Inspections Within Past Four Years  
As reported in Table ?? of MRP-???, Plant [*has, has not*] performed RPV head and nozzle inspections within the past four years.

*Provide a description, and photographs if possible, describing vessel head and nozzle inspections performed within the past four years.*

- e. Description of Equipment and Cables on Top of Vessel Head

*Provide a description of the equipment and cables on the vessel head, including a figure if possible. If you plan to use a PRA approach to not performing inspections, the NRC has indicated that they will need additional details in this area.*

2. Plans for Future Inspections

Plant plans to perform inspections of the RPV head and nozzles as recommended by MRP-???. The inspections will consist of [*choose from one of the following*]

- For DC Cook 2  
*inspections of the wetted surface of nozzles by ECT during the Fall 2001 outage to detect significant cracking in the nozzle base material and welds. Crack type indications will be characterized by ECT, PT and UT, and the nozzle repaired per the acceptance criteria of MRP-???, Section ???.*
- For Oconee 1-3 and ANO-1  
*qualified visual inspections<sup>1</sup> of the top head bare metal surface at the next scheduled refueling outage in [month/year]. If any leaks are detected, the source will be determined, the cracks leading to the leak characterized by ECT, PT and UT, and the nozzle repaired. The inspection scope will be expanded to non-leaking nozzles as described in MRP-?? if the characterization shows circumferentially oriented cracks above the weld exceeding 20% of the nozzle cross section area.*
- For North Anna 1&2, Surry 1&2, TMI-1, and Davis-Besse  
*qualified visual inspections of the top head bare metal surface at the next scheduled refueling outage in [month/year]. If any leaks are detected, the source will be determined, the cracks leading to the leak characterized by ECT, PT and UT, and the nozzle repaired.*

<sup>1</sup> "Qualified visual" examination is defined in the same terms as specified by the NRC in Bulletin 2001-01: 1) through-wall cracking will result in leakage reaching the head surface, and 2) the effectiveness of visual inspections of the head will not be compromised by insulation, existing deposits or other factors.

- Plants 5-30 EFPY Relative to Oconee-3 and With Access for Visual Inspections  
*visual inspections of the top head bare metal surface at the next scheduled refueling outage in (month/year). If any leaks are detected, the source will be determined, the cracks leading to the leak characterized by ECT, PT and UT, and the nozzle repaired.*
- Plants 5-30 EFPY Relative to Oconee-3 Without Good Access for Visual Inspections  
*visual inspections of the top head after removing tight fitting insulation, or volumetric inspections of nozzles from under the vessel head, at a future refueling outage if determined necessary based on MRP evaluation of the Fall 2001 outage findings.*
- Plants > 30 EFPY Relative to Oconee 3  
*visual inspections of the reactor top head area for leaks per the current 88-05 leakage detection program.*

**COMMENT: The suggested response does not address the inspection scope (all or some) or acceptance criteria as requested in the bulletin. From the bulletin it also appears that the NRC is expecting some discussion on the process we will use for qualification. Qualification should be addressed for both the visual and the ECT, PT, and UT. For example will the processes be qualified to only see cracks which are on the inside surface of the nozzles like we are capable now or will the qualification extend through the entire volume of the nozzle or the entire nozzle and into the J groove weld. Acceptance Criteria is also not addressed.**

3. Basis for Concluding That Regulatory Requirements are Met

The technical basis for concluding that regulatory bases are met for Plant is provided in Section ?? of MRP-???

4. Reporting of Future Inspection Results

Plant will provide the NRC with the following information within 30 days after plant restart following the next refueling outage if any leaks or cracks are discovered:

- a. A description of the extent of VHP nozzle leakage and cracking detected at Plant. This information will include the number, location, size and nature of each crack detected.
- b. A description of the inspections (type, scope, qualification requirements, and acceptance criteria), repairs and other corrective actions taken to satisfy applicable regulatory requirements.