

March 21, 2003

MEMORANDUM TO: Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management

FROM: Steven D. Bloom, Project Manager, Section 2 /**RA**/  
Project Directorate III  
Division of Licensing Project Management

SUBJECT: SUMMARY OF MEETING HELD ON FEBRUARY 24, 2003, WITH  
NUCLEAR ENERGY INSTITUTE AND ELECTRIC POWER RESEARCH  
INSTITUTE - MATERIAL RELIABILITY PROGRAM TO DISCUSS WITH  
INDUSTRY THE ORDERS ISSUED ON REACTOR VESSEL HEAD  
INSPECTIONS

On February 24, 2003, representatives of the Nuclear Energy Institute (NEI) and Electric Power Research Institute - Materials Reliability Program met with the Nuclear Regulatory Commission (NRC) staff to discuss the orders issued on February 11, 2003, on reactor vessel head inspections. This was a Type 2 public meeting. Copies of the slides used during the meeting are available under ADAMS accession number ML030650115 and the NRC web site at <http://www.nrc.gov/reactors/operating/ops-experience/vessel-head-degradation.html>. The meeting attendance list is Attachment 1. The answers to the questions contained in the NEI letter dated February 19, 2003, and additional questions received by email and asked at the meeting can be found in Attachment 2.

Brian Sheron and the Nuclear Reactor Regulation staff made various presentations which are contained in the copies of the slides. Following the NRC presentations, Alex Marion of NEI made a statement in response to the Orders. During the public meeting, the NRC staff read and responded to the questions provided by the NEI in their letter dated February 19, 2003 (ML030650550). In addition to those questions, several questions were asked prior to the meeting via email and other questions were asked by participants during the meeting. The staff responded to all of these questions.

#### **Significant Statements by Staff**

- NRC staff clarified what was meant by 100 percent bare metal visual, all wetted surfaces, and stated that "100 percent" in the order did not mean essentially 100 percent as described in 10 CFR 50.55a(g)(6)(ii)(A)(2).
- NRC staff stated that surface examination of all J-groove welds is one approach to satisfy the requirement for assessment of leakage into interference-fit zone, if a 100 percent ultrasonic examination of vessel head penetrations was conducted.
- NRC staff stressed that bare metal visual examinations are an important aspect of reactor pressure vessel head inspections. Licensees are expected to remove thermal

insulation, if necessary to conduct a bare metal visual examination and thus comply with the Order.

- NRC staff informed attendees that requests for relaxations do not have to be submitted with the 20-day responses. Requests for relaxations can be submitted at any time during the period the Order is in effect.
- NRC staff informed attendees that relaxation of the Order would not require a license amendment, because of provisions in the Order that provide for requesting relaxation.
- NRC staff informed attendees that the NRC staff had considered making a distinction between the inspection of reactor pressure vessel heads manufactured from Alloy 600 and those manufactured from Alloy 690. However, the NRC staff concluded that there was insufficient documented technical information to demonstrate that Alloy 690 could be inspected less frequently and still provide reasonable assurance that public health and safety would be maintained. The NRC staff suggested that the industry conduct comparative crack initiation and growth experiments that would clearly demonstrate any superior resistance of Alloy 690 to primary water stress corrosion cracking.

#### **Significant Statements by NEI**

- A Nuclear Energy Institute representative stated that two requirements in the Order are considered an “unreasonable burden” by the industry: (1) the reinspection frequency for plants with a high susceptibility to cracking of the vessel head penetration nozzles, and (2) not providing a different set of inspection and inspection frequencies for reactor pressure vessel heads manufactured from Alloy 690.

Project No. 0689

Attachments: As stated

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301-415-1313

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MEETING WITH NUCLEAR ENERGY INSTITUTE (NEI) AND ELECTRIC POWER  
RESEARCH INSTITUTE - MATERIAL RELIABILITY PROGRAM (EPRI-MRP)

MEETING ATTENDEES

ORDERS RELATED TO REACTOR VESSEL HEAD INSPECTIONS

FEBRUARY 24, 2003

<u>NAME</u>	<u>AFFILIATION</u>
B. Sheron	NRC
W. Dean	NRC
A. Hiser	NRC
W. Reckley	NRC
M. Marshall	NRC
S. Bloom	NRC
A. Mendiola	NRC
M. Chawla	NRC
R. Fretz	NRC
C. Sydnor	NRC
E. Reichelt	NRC
W. Cullen	NRC
K. Golt	NRC
D. Brack	US GAO
A. Marion	NEI
K. Cozens	NEI
L. Hartz	Dominion
L. Mathews	Southern Company
A. Marion	NEI
D. Labott	PSEG
H. Fontecilla	Dominion
J. Manso	Florida Power and Light - Turkey Point
H. Malikowski	PSEG Nuclear LLC
D. Covill	Progress Energy
S. Christoffersen	Mirant Company
R. Phelps	OPPD
M. Flahety	RG&E
G. Madden	FPL
A. Wyche	Serch Licensing/Bechtel
T. Robinson	Framatome ANP
J. Petro	CEG
D. Horner	McGraw-Hill
G. White	Dominion Engineering, Inc.
C. Maxson	Dominion - Millstone
B. Hardies	Constellation Energy
E. Schoonover	SCE
J. Kirkwood	Constellation Energy
S. Koff	Cleveland Plain Dealer
J. Johnson	Chem & Eng News

M. Schoffman	Framatome ANP
E. Caba	Progress Energy - Robinson
W. Sims	EOI - A600 Technical Lead
R. Schmidt	PSEG Nuclear - Rx Vessel Eng
T. Oliveri	PSEG Nuclear - ISI
C. Harrington	TXU Energy
C. Willbanks	Sciencetech US
D. Garner	American Electric Power
D. Miller	Entergy Operations, Inc
M. Mosier	PSEG
C. Tomes	Nuclear Management Company
D. Distel	Exelon
P. Okas	Entergy North East
G. Tesfaye	Constellation Generation Group
P. Campbell	Winston & Strawn
R. Lucketi	NEI/STARS
B. Flynn	Rochester Gas & Electric
M. Woods	Pittsburgh Pas Gazette
R. Huston	Licensing Support Services
T. Raidy	SCE, Licensing
D. Schlader	Framatome ANP
V. Armentrout	Dominion Virginia Power (By phone)
N. Azevedo	Entergy (By phone)
D. Bauman	Entergy (By phone)
H. Beeman	Dominion Nuclear CT (By phone)
B. Bickett	NRC (By phone)
S. Boggs	Florida Power & Light (By phone)
A. Butcavage	Rochester Gas & Electric (By phone)
M. Cash	Duke Energy (By phone)
C. Castell	Progress Energy (By phone)
D. Cecchetti	Exelon Nuclear Corp.(By phone)
L. Cecilia	Progress Energy - Crystal River 3 (By phone)
S. Collard	Florida Power & Electric (By phone)
J. Connolly	FPL Energy - Seabrook (By phone)
J. Coviello	Duquesne Capital Management (By phone)
J. Crane	Westinghouse (By phone)
D. Daughetee	Southern Nuclear (By phone)
M. Fleming	Dominion Engineering (By phone)
B. Friese	American Express (By phone)
G. Gardner	Dominion (By phone)
G. Gerzen	Exelon (By phone)
R. Gil	Florida Power & Light (By phone)
W. Harrison	STP Nuclear Operating Company (By phone)
B. Holderness	Amergen (By phone)
C. Ionescu	Progress Energy Carolinas (By phone)
S. Koernschild	Exelon Nuclear - Byron (By phone)
F. Lipchick	FENOC (By phone)
B. Lisowyj	OPPD (By phone)

J. Mackinnon	Akron Beacon Journal (By phone)
M. McDevitt	Southern California Edison (By phone)
B. McIntyre	American Electric Powers (By phone)
J. Morrow	Dow Jones Newswire (By phone)
D. Naylor	Wolf Creek Generating Station (By phone)
C. O'Claire	Ohio Emergency Management Agency (By phone)
J. Portney	Pacific Gas & Electric Company (By phone)
R. Rogalski	APS (By phone)
T. Shaub	Dominion (By phone)
J. Shuping	Duke Energy (By phone)
J. Steele	Action for a Clean Environment (By phone)
J. Turkett	South Carolina Electric & Gas (By phone)
S. Vance	Exelon (By phone)
J. Waters	American Electric Power (By phone)
D. Weakland	First Energy Westinghouse (By phone)
T. Weber	Arizona Public Service (By phone)
J. Woodlan	STARS (By phone)
D. Wuokko	FENOC (By phone)

Questions From NEI Letter Dated February 19, 2003

Question	Response
<p>1. The order requires visual inspection of 100% of the RVH surface, 360° around a nozzle and NDE coverage up two inches above the weld. Achieving 100% is rarely achieved in the field, especially for complex structures such as the RPV head. During the fall 2002 RPV head inspections, numerous licensees informed the NRC staff of instances where they were unable to achieve 100% coverage. Many of these interferences were discoveries that could not be anticipated in advance. However, licensees were still able to assure integrity of the RVH.</p> <p>The NRC's regulation 10CFR50.55a requires "essentially 100%," which requires examination of more than 90 percent of the volume. Will the NRC consider this typical definition of "essentially 100%" to satisfy the Order's 100% coverage requirement?</p> <p>We propose that the NRC staff develop a Temporary Instruction and protocol to better define the 100% criteria as being consistent with other NRC regulations that define "essentially 100%."</p>	<p>The wording in the Order of 100% and 360° around each nozzle cannot be revised through guidance documents to allow the use of the "essentially 100%" standards used for other inspections in 10 CFR 50.55a.</p> <p>If licensees identify specific nozzles before an inspection or even during an inspection that cannot be completely covered, the issue will need to be addressed using the relaxation provisions within the Order. We did specify a change provision that uses the language and process of relief requests both licensees and the NRC staff are accustomed to using, as described in 10 CFR 50.55a(a)(3).</p>

2. In the past, visual inspections of the RV head have been performed to include essentially 360° around a penetration and in the process of performing that inspection, licensees determined if wastage had occurred on the head. The literal interpretation of the Order's 100% visual inspection requirement suggests that the licensee is required to visually inspect all surface area including that with no meaningful source of boric acid leakage (e.g., inside the RV head stud holes, under the cooling shroud ring, underside of the head and inside the RVH lifting lug bolt holes) to determine if wastage has occurred. These inspections do not appear to be consistent with our understanding of the intent of the Order.  
Please provide clarification of "100% of the RVH surface."

Since the order is focused on cracking of RPV head penetration nozzles and related areas of the RPV head that may be subject to external sources of boric acid, the scope of the 100% BMV of the RPV head is those areas and not the inside of the head studs, inside the lifting lug bolt holes, etc. However, Order Section IV.D requires that leakage from external source(s) that could impact those areas should be examined to provide assurance of no adverse effects to the head from the leakage.



3. The order specifies that ultrasonic testing of each nozzle be performed from two inches above the J-groove weld to the bottom of the nozzle.

The bottom of the nozzle is not a good reference point for the lower extent of the scope of these inspections. Some plant's nozzles extend some distance below the weld. Other plants have threads cut into the bottom of the nozzle, with or without a taper. Please explain the technical basis for requiring coverage as high as two-inches above the weld and to the bottom of the penetrations.

The coverage criteria required by the order will likely require many exceptions. Will each of these specific exceptions need to be processed through the relaxation request procedures or could the order be amended to clarify the required inspection coverage?

All exceptions to the scope of the ultrasonic testing will require a relaxation request, including a technical justification for the specific relaxation proposed.

<p>4. The last paragraph on page 6 states:          "This calculation shall be performed with best estimate values for each parameter at the end of each operating cycle for the head that will be in service during the subsequent operating cycle. The calculated value of EDY shall determine the susceptibility category and the appropriate inspection for the RPV head during each refueling outage."</p> <p>The EFPY term in the equation typically addresses the time period between initial plant startup and the refueling outage when the inspections are to be performed and does not include the subsequent operating cycle.</p> <p>Please clarify this is consistent with the intended definition of EFPY contained in the Order.</p>	<p>The subject sentence should be read that the value of EDY to determine an inspection is the value at the end of the cycle preceding the outage.</p> <p>The wording related to subsequent cycles was added to address replacement heads and would indicate that the replacement head has an EDY of zero upon restart of the plant.</p>
<p>5. The order requires a calculation of accumulated EDYs for each operating cycle. Once a plant reaches the "high" susceptibility category, is this periodic calculation required to be performed and documented?</p>	<p>The Order states the calculation is to determine the required inspections for each refueling outage. Once an RPV head exceeds 12 EDY, the category is fixed and one could argue that previous calculations could satisfy the requirement. Given the simplicity of the calculation and the longer term goals to collect data on operating experience and correlate the inspection findings with the plant's susceptibility, there would seem to be little reason not to perform the calculation each cycle.</p>

<p>6. Clarify that initial construction/installation inspections performed on replacement heads will fulfill the requirement for the initial 100% bare metal visual inspection specified in Order Section IV.C(3)(a), and thus the next 100% bare metal visual inspection for the new head would be required within the next three refueling outages or five (5) years whichever occurs first.</p> <p>Similarly, Section 3(b) is required to be implemented "at least once over the course of five (5) years after issuance of the order and thereafter at least every four (4) refueling outages or every seven (7) years, whichever occurs first." For a newly replaced head, can the specified interval be redefined to state at least once over the course of five (5) years after replacement of the head unless a preservice baseline exam was performed in which case the four RFO/ seven year interval applies?</p>	<p>Assuming a pre-service visual inspection of the replacement head is performed, it would satisfy the requirements of 3(a) and the plant would be in the 3 cycle or 5 year inspection frequency.</p> <p>The same is true for the item 3(b) provided that the preservice inspection meets the requirements of the Order.</p>
<p>7. The Order does not explicitly define inspection criteria for plants that replaced the reactor head with a head using Alloy 690 penetrations. In this situation, will the licensee be required to use the same EDY calculation that is specified for reactor heads with Alloy 600 penetrations?</p>	<p>In Brian Sheron's letter, dated October 23, 2002, to NEI, he stated that Alloy 690 heads would be treated like Alloy 600 heads until technical basis for different inspection plans are developed. Accession Number ML022820687.</p>

<p>8. Some plants have ordered replacement reactor heads with Alloy 690 penetrations. Will these plants be given relief from the specified inspection requirements for their first refueling outage following issuance of the order if the replacement is to occur in their second refueling outage following issuance of the order?</p>	<p>No, licensees will still be required to perform the appropriate inspections based on the EDY of the current head.</p> <p><b><i>(As addressed by #6 above)</i></b></p>
<p>9. Clarify the NRC expectation for the level of detail required in the 60-day reports, and the basis for the 60-day interval. Typically, NDE vendors need 60 to 90 days to issue the final examination reports to the licensees. Thus, a 90-day reporting requirement similar to existing requirements for ASME Code ISI inspection reports would be reasonable. If a 60-day report is required, clarify if this report can be in some format other than the final vendor NDE examination report.</p>	<p>The level of detail expected is similar to that for the bulletin responses and does not need to be in the format of the final NDE examination report.</p>
<p>10. Paragraph (2) on page 8 states that: "...In addition the requirements of 2(a) and 2(b) shall each be performed at least once over the course of every two (2) refueling outages...." Is it the intent that these exams be alternated or must both be performed simultaneously every two refueling outages.</p>	<p>At least one of the two inspections needs to be performed each refueling outage and both inspections need to be performed at least once every other outage. Alternating the inspections is an acceptable way to meet this requirement. The wording may be awkward because we did not want to preclude a licensee from performing both inspections during a single outage. However - if both inspections are performed during a single outage, the licensee would still be required to perform either (a), (b), or both during the next refueling outage.</p>

<p>11. A moderate susceptibility plant is planning to do 100% BMV plus NDE of nozzles in the coming outage. This is a proactive approach since by the new order NDE would not be required for 1 additional cycle. Can the plant credit that NDE as the NDE required for the first cycle when the plant enters the high susceptibility ranking?</p>	<p>Since they would be required to do both BMV and additional NDE during each outage once they enter the high category, it is not clear what is meant by crediting the NDE.</p> <p>If the plant remains in the moderate category, the licensee would still need to do a BMV, an NDE or both during the next outage even though they did both during this outage.</p>
<p>12. In the testing of nozzles/welds, will a surface exam of the weld (ECT or PT) meet the intent of "an assessment to determine if leakage has occurred into the interference fit zone."</p>	<p>In conjunction with an ultrasonic examination of the nozzle base material that would identify any flaws in the nozzle base material, a surface examination of the weld would meet the intent of "an assessment to determine if leakage has occurred into the interference fit zone."</p>
<p>13. The order states, "visual inspections shall be performed to identify potential boric acid leaks from pressure-retaining components above the reactor head."</p> <p>Please clarify that bare metal visual inspections of all CRDM pressure-retaining surfaces, including those that may be normally obscured, is not required by this statement.</p>	<p>The intent of this inspection is to identify possible sources of boric acid to the RPV head that are independent of VHP nozzle cracking and leakage. To accomplish this, the visual examination should provide sufficient coverage to demonstrate that there are no boric acid leaks from pressure-retaining components above the reactor head.</p>
<p>14. The Order (Footnote 2) allows deviation from its requirements for the next refueling outage, "if the NRC staff has already accepted a specific variation from the requirements of the Order."</p> <p>Will this Order requirement be satisfied if the NRC staff gave its acceptance during a conference call with the licensee or is it necessary that the NRC provided its acceptance in writing?</p>	<p>Only acceptance documented in a letter from the NRC satisfies the exception in Footnote 2.</p> <p>However - if the staff has been having discussions with a licensee and general agreement was reached - although not documented in a letter - the groundwork for the NRC approving the alternative has been largely completed and we can act quickly on the request. We are currently working with several licensees that are in this situation.</p>

<p>15. Footnote 1 states:          “The NRC has issued guidance to address flaw evaluations for RPV head penetration nozzles (see letter dated November 21, 2001, from J. Strosnider, NRC, to A. Marion, Nuclear Energy Institute) ...”          Does Footnote 1 allow the use of alternatives for flaw evaluation that are found acceptable to the NRC staff without a license amendment or specific relaxation per IV.F.</p>	<p>The Order does not change the status of the guidance related to flaw evaluations. Licensees are encouraged to bring questions to the staff to avoid confusion or disagreements that would otherwise be identified after the outage or through the inspection program. As mentioned in the Order, the staff may issue additional guidance as the methodologies are refined.</p>
<p>16. Please clarify the range of options available to a licensee to seek relaxation of specific aspects of the Order following the twenty-day initial period.</p>	<p>Licensees may seek general or programmatic relief which would be covered by the first part of the relaxation provision. This would involve a submittal that would need to provide the justification of "good cause" and would require approval of the Director of NRR</p> <p>Licensees may seek relief for specific nozzles using the second part of the relaxation provision using the same process used for proposed alternatives under 10 CFR 50.55a(a)(3).</p> <p>These requests do not need to be included in the 20-day response. The 20-day responses need only mention if a licensee knows that it will be seeking relaxation because it is unable to meet a requirement. The actual request may be made later but please allow enough time before an outage for the staff to review the proposed alternative.</p>
<p>17. Will the NRC consider long term relaxation from the bare metal visual examination requirement for high susceptible plants who cannot remove their insulation without costly modifications to their RPV head insulation package?</p>	<p>The NRC will consider all relaxation requests. However, the use of bare metal visual examination is a complementary examination to the non-visual examination requirements of the Order.</p>

<p>18. The order does not allow for the use of new volumetric and/or surface inspection technologies. Once new technologies are developed will the order be revised.</p>	<p>The NRC will consider modifications to the Order as necessary, considering the demonstrated effectiveness of any new technologies, and qualification of the procedures and personnel involved with the new technology.</p>
<p>19. Responses to these questions are expected to involve clarifications that may significantly affect a licensee's response or actions taken because of the Order. Please discuss the process that the Staff will use for documenting the responses to these questions for formal use by the licensees.</p>	<p>The staff has answered these questions during the course of the meeting and during the initial question and answer part. The staff will be issuing a formal letter in response to the letter and will be referencing the presentation and meeting summary.</p>

Questions from Various Emails and Questions Received from Participants During the Meeting

1. Section IV.F of the order states that, in the 20 day response required by Section V, licensees shall notify the Commission if: (1) they are unable to comply with any of the requirements of Section IV, or (2) compliance with any of the requirements of Section IV is unnecessary. Section IV.F also states that licensees proposing to deviate from any of the requirements of the order shall seek relaxation of the order by requesting that the Director, Office of Nuclear Reactor Regulation, relax or rescind the requirement in accordance with the process specified in Section IV.F.

It appears that these provisions require that the 20 day response identify those order requirements from which the licensee intends to subsequently request deviation. It appears that the 20 day response need only identify the requirement that can't be met or that is unnecessary, and need not provide an explanation or justification. The explanation or justification would be contained in the request for relaxation subsequently submitted to the Director, Office of Nuclear Reactor Regulation. Is this understanding correct?

The 20-day response should include any mention of requirements that the licensee has identified that it cannot meet or believes to be unnecessary and will therefore be the subject of a request for relief. The 20-day response does not need to include the request or the justification, which can be submitted at a later time in support of specific inspections/refueling outages.

2. If a licensee discovers, subsequent to submitting the 20 day response required by Section V, that a requirement in the order can't be met or is unnecessary, may the licensee still request relaxation from the Director, Office of Nuclear Reactor Regulation?

Requests may be submitted later, addressing issues not mentioned in the 20-day response, if a licensee subsequently discovers a problem or otherwise decides a requirement in the Order is not feasible or unnecessary.



<p>3. Since the order is a modification of the facility license, would a request for relaxation, as described in Section IV of the order, have to be submitted under 10 CFR 50.90 as a license amendment request?</p>	<p>The requests should be in the form of a letter (similar to a relief request) and not an amendment request per 10 CFR 50.90.</p>
<p>4. Section IV of the order describes additional requirements (similar to those applied to 10 CFR 50.55a(a)(3) requests) that would be invoked for a relaxation regarding inspection of "specific nozzles." However, the additional requirements would also seem to be relevant to a relaxation request that affects inspection requirements for all nozzles on a reactor vessel head. Please explain the distinction intended by use of the term "specific nozzles."</p>	<p>We were trying to distinguish between programmatic types of relaxations and limited relaxations for specific nozzles. It is true that the "good cause" criterion in the first relaxation provision could include much of the discussions required by 50.55a(3) that are used in the second provision for specific nozzles.</p>
<p>5. Oder EA-03-009, Section IV, Paragraph E, requires, "For each inspection required in Paragraph C, the Licensee shall submit a report detailing the inspection results within sixty (60) days after returning the plant to operation." Footnote 4 modifies this sentence and specifies, "this reporting requirement supercedes the 30-day reports requested by NRC Bulletin 2002-02."</p> <p>Does this reporting requirement of Order EA-03-009, Section IV, Paragraph E, also supercede the 30-day reporting requirements of NRC Bulletin 2001-01 and NRC Bulletin 2002-01?</p>	<p>Yes - the only post-outage inspection reports remaining are those required by the Order.</p>

<p>6. ... it appears that the 20-day response need only identify the requirements that cannot be met or that are unnecessary, and need not provide a detailed explanation or justification. The detailed explanation or justification would be contained in the separate request for relaxation subsequently submitted to the Director, Office of Nuclear Reactor Regulation. Is this understanding correct? Does the licensee need to provide in the answer to the Order an expected date for the separate submittal.</p> <p>Would it also be acceptable to submit the request with the answer to the Order if a licensee already has the information needed to justify the request.</p>	<p>Yes</p> <p>The licensee is not required to provide the expected date for a future submittal. Such information is useful to the staff and may be included in the response to the Order or provided via routine discussions with the staff. Licensees should provide ample time for the NRC staff to review proposed relaxations.</p> <p>It is permissible to include the request in the 20-day response.</p>
<p>7. If a licensee discovers, subsequent to submitting the 20-day response required by Section V, that a requirement in the Order cannot be met or is unnecessary, may the licensee still request relaxation from the Director, NRR, in accordance with Section IV.F of the Order?</p>	<p>Yes</p>
<p>8. Because the Order specifies a process for requesting an alternative, it does not appear to require the submittal to be in the form of a license amendment request (10 CFR 50.90). Is this correct - that the submittal may be made in accordance with Section IV.F of the Order rather than 10 CFR 50.90.</p>	<p>Yes</p>
<p>9. Alex Marion stated that the Order/Bulletin is an unreasonable burden - was that limited to 2 areas of concern or any RPVH inspection requirements.</p>	<p>Only the 2 areas:  1) High Susceptibility inspection frequency.  2) Treatment/Grouping of Alloy 600 and Alloy 690.</p>

<p>10. How is the NRC going to be staffed on weekends during outages to handle relaxations found during outages?</p>	<p>The NRC staff will be available for any type of relaxation requests that occur during outages. The licensee will need to contact their respective project manager who will get the proper technical staff for any type of discussions or work that will need to be conducted on the weekend.</p>
<p>11. Do relaxations have to be received in writing prior to startup from an outage?</p>	<p>The NRC staff may give positive verbal consent for a relaxation, however, the staff will provide formal written approval prior to restart.</p>
<p>12. The issue is not "Why issue an Order?", it is rather "Why so secretly?" Why not issue a "Draft Order" for industry input, as in the case of the Security Order.</p>	<p>The NRC did not issue the order "secretly." Uncertainty in licensee commitments for future inspections, deficiencies in the ASME Code (and therefore 10CFR50.55a) to address observed head degradation phenomena, and the need for licensees to be able to predictably plan for inspections in future outages prompted the NRC to conclude that an order was the appropriate regulatory tool to use in this case. Also, the inspection requirements in the Order were very similar to the August 2002 inspection guidance issued in Bulletin 2002-02, and industry had not proposed any alternative inspection guidance since issuance of the Bulletin.</p>
<p>13. In the interim until NRC regulations are changed, may a licensee request a relaxation to the Order requirements in accordance with Section IV.F, even after the Order has been in effect for some period of time, - e.g., during the second or third outage - as necessary?</p>	<p>Yes, licensees can request a relaxation as long as the Order is in effect.</p>
<p>14. When will Nuclear Energy Institute get a formal response to the questions it submitted to the NRC staff in a letter dated February 19, 2003.</p>	<p>The NRC staff prepared responses to the questions included with the letter, dated February 19, 2003, from Nuclear Energy Institute with the meeting handouts. In addition the NRC staff plans to include the questions and answers in the meeting summary and provide a separate letter response to Nuclear Energy Institute.</p>

<p>15. Is the flaw evaluation guidance mentioned in the Order a requirement?</p>	<p>No, the Order does not change the status of the guidance related to flaw evaluations. Licensees are encouraged to bring questions to the staff to avoid confusion or disagreements that would otherwise be identified after the outage or through the inspection program. As mentioned in the Order, the staff may issue additional guidance as the methodologies are refined.</p>
<p>16. When is footnote 2 in the Order applicable?</p>	<p>The footnote is only applicable when the plant was provided a written response to their reply to Bulletin 2002-02 and only for the outage mentioned in the NRC written response.</p>
<p>17. How many plants were sent responses to their replies to Bulletin 2002-02?</p>	<p>All the NRC responses have been posted on the NRC webpage for Bulletin 2002-02. The web address is:  <a href="http://www.nrc.gov/reactors/operating/ops-experience/alloy600/plant-info-02.html">http://www.nrc.gov/reactors/operating/ops-experience/alloy600/plant-info-02.html</a></p>
<p>18. Is the process for requesting relaxation to the Order similar to the process for requesting relief from American Society of Mechanical Engineers Code requirements?</p>	<p>The process for requesting relaxation from the Order is the same as seeking relief from American Society of Mechanical Engineers Code requirements. The NRC staff intends to evaluate requests for relaxation using the same guidance as used for reviewing relief requests.</p>
<p>19. Is the reporting requirement for documenting the inspection 60-days from the completion of the inspection or 60-days from completion of the refueling outage?</p>	<p>The reporting requirement is for a summary report to be provided to the NRC 60-days from completion of the refueling outage (i.e., restart).</p>
<p>20. Does the NRC have an example of a previous program that could be used as an example for demonstrating that Alloy 690 is more resistance to cracking than Alloy 600? If so, what were the positive aspects?</p>	<p>Suggested aspects of a program for demonstrating that Alloy 690 is more resistance to cracking than Alloy 600 may consist of comparative crack initiation and growth experiments that would conclusively demonstrate that Alloy 690 is more resistant to primary water stress corrosion cracking than Alloy 600 and a systematic monitoring of Alloy 690 service performance in selected plants to verify its greater resistance.</p>

21. If a plant received a written response to its reply to either Bulletin 2001-01 or Bulletin 2002-01, does that satisfy footnote 2 of the Order?	No.
22. Even though EDY is used to determine susceptibility, is it correct that EFPY is used to determine time?	Yes.
23. If changes need to be made to the Order, what process will the NRC follow to modify the Order?	Depending on how close the NRC is to establishing requirements through rulemaking, the NRC would either modify the Order (i.e., issue a revision) or complete a rulemaking to implement modifications to the requirements in the Order.
24. If a large number of plants make a successful request for relaxation to the Order, will the NRC consider modifying the Order?	Yes, but depending on how close the NRC is to establishing requirement through rulemaking, the NRC would either modify the Order (i.e., issue revision) or complete a rulemaking to implement modifications to the requirements in the Order at which point the Order would no longer be in effect.
25. Is an electronic version of the Nuclear Energy Institute questions available?	Yes, at the NRC website for Alloy 600 Issues. The web address is: <a href="http://www.nrc.gov/reactors/operating/ops-experience/alloy600/news-corres.html">http://www.nrc.gov/reactors/operating/ops-experience/alloy600/news-corres.html</a>
26. On the website near the link for the Order, Oconee 3 is listed as a Low susceptibility plant because of head replacement. Is that an error?	Yes, Oconee 3 should be listed as high susceptibility plant, because the licensee has not begun its head replacement and was not scheduled to begin until the upcoming outage.
27. Will the NRC object to a generic relaxation of the Order that is prepared by a vendor and submitted by a licensee?	No, but each request would be evaluated on a plant-by-plant basis. However, depending on how close the NRC is to establishing requirements through rulemaking, the NRC would either modify the Order (i.e., issue revision) or complete a rulemaking to implement generic modifications to the requirements in the Order at which point the Order would no longer be in effect.

<p>28. Would a generic relaxation be considered a rulemaking?</p>	<p>Depending on how close the NRC is to establishing requirement through rulemaking, the NRC would either modify the requirements in the Order (i.e., issue revision) or complete a rulemaking to implement modifications to the requirements in the Order at which point the Order would no longer be in effect.</p>
<p>29. Does the “assessment to determine if leakage has occurred into the interference fit zone” apply if the nozzle doesn’t have an interference fit zone?</p>	<p>This assessment applies to all vessel head penetration nozzles, whether they have an interference fit or a clearance fit. This requirement may be more correctly interpreted as “assessment to determine if leakage has occurred into the <b>annulus between the VHP nozzle and the RPV head, including the</b> interference fit zone.” In particular, the intent of this assessment is to provide assurance that there are no through-wall cracks in the J-groove weld as a defense-in-depth of the bare metal visual examination, no matter the configuration of the fit between the nozzle and the head.</p>
<p>30. If ultrasonic test data are not available for a nozzle because of a loose fit between the VHP nozzle and the RPV head (i.e., there is no interference fit zone) or some other impediment, can the “assessment to determine if leakage has occurred into the interference fit zone” be based on a clear bare metal visual examination of the head at the nozzle (i.e., no visible boric acid deposits) and no cracking in the nozzle?</p>	<p>The “assessment” described in the Order is intended to provide assurance that there are no through-wall cracks in the J-groove weld for the nozzle, as a defense-in-depth of the bare metal visual examination. Therefore, the “assessment” should provide additional information on the condition of the J-groove weld, for example through eddy current or dye penetrant testing.</p>