Questions From NEI Letter Dated February 19, 2003	
Question	Response
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. 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? 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%".	The wording in the Order of 100% and 360° around each nozzle can not be revised through guidance documents to allow the use of the "essentially 100%" standards used for other inspections in 10 CFR 50.55a. 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 because both licensees and the NRC staff are accustomed to using, as described in 10 CFR 50.55a(a)(3).

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.

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." 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. Please clarify this is consistent with the intended definition of EFPY contained in the Order.	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. The wording related to subsequent cycles was added to address replacement heads and would indicate that the replacement head has an EDY of 0 upon restart of the plant..
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?	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.

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. 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?	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. The same is true for the item 3(b) provided that the preservice inspection meets the requirements of the Order.
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?	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.
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?	No, licensees will still be required to perform the appropriate inspections based on the EDY of the current head. ***(As addressed by #6 above)***

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.	The level of detail expected is similar to that for the bulletin responses and does not need to include the final NDE examination report.
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.	At least one of the two inspections need 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.
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?	Since they would be required to due 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. 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.
12. In the testing of nozzles/welds, will a surface exam of the weld (ECT or PT) meet the intent of "an assessment of to determine if leakage has occurred into the interference fit zone."	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 of to determine if leakage has occurred into the interference fit zone."

13. The order states, "visual inspections shall be performed to identify potential boric acid leaks from pressure-retaining components above the reactor head." 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.	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.
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." 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?	Only acceptance documented in a letter from the NRC satisfies the exception in Footnote 2. 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.
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.	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.

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.	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 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). These requests do not need to be included in the 20-day response. The 20-day response 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.
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?	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.
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.	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.
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.	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.