

Questions and Answers From the March 2, 2004, NRC Public Meeting with NEI, EPRI, and

Industry to Present the

First Revised NRC Order (EA-03-009)

1. Section V: Must licensees submit an answer to the First Revision by 3/11/04 if they have already answered the original order?

Answer: Yes. Licensees must submit an answer as required by Section V.

2. If a relaxation request has been submitted under the original order but not yet approved, and that or similar relaxation request is still needed under the revised order, must that original request be revised and re-submitted?

Answer: No. However, if during the NRC staff review of the submittal additional information is required, NRC staff will request additional information from the licensee.

3. Footnote 2 on page 7 says a previously accepted "inspection plan" may continue to be used for the first refueling outage after 2/11/2003 provided the discrepancies between the current requirements and the previously accepted plan are identified in response to this order. Does this also apply to those specific areas where the current order may be more restrictive than the original order (e.g. horizontal plane for upper and lower bounds of inspection volume)?

Answer: Yes. All requirements of Footnote 2 must be met. Footnote 2 is applicable only to the first outage after February 11, 2003, AND if the NRC staff has previously accepted a specific variation from the requirements of this Order. Licensees are encouraged to contact NRC staff for clarification if questions regarding inspection requirements arise.

4. Does the stress analysis used to determine the inspection volume need to be plant specific, or can generic analyses such as those from MRP-95 be used?

Answer: The stress analysis used to determine the inspection volume may be a bounding generic analyses, but the licensee must be able to demonstrate for its facility, the applicability of the data and analysis assumptions upon which the bounding analysis was based.

5. It is not clear that the revised order will result in a significant reduction in the need for relaxation requests. Can the NRC process a relaxation review in a few days? For example, based on drawing reviews a utility believes that it can meet the one inch requirement but into the outage, one or more nozzles may not meet the one inch requirement.

Answer: NRC staff will continue to perform relaxation reviews in a timely manner to ensure that public health and safety is maintained. The time required to process

a relaxation request depends on the quality of the submittal and the complexity of the issue.

6. If there is less than 1" from the toe of the weld to the bottom of the nozzle, and UT cannot examine all the way to the bottom of the nozzle, is it the intent that surface examination (PT or ET) of the ID of the nozzle be required for that small portion on the ID not examined by UT?

Answer: Yes. Surface examination (PT, ET or a combination) of the remaining wetted surface would be required including the bottom of the nozzle.

7. If one is performing wetted surface examinations under IV.C(5)(b)(ii) on page 10 of the revised order, and there is less than 1 inch from the toe of the weld to the bottom of the nozzle, is it the intent that the bottom face of the nozzle also be examined?

Answer: Yes. The wetted surface contains the bottom of the nozzle in this instance.

8. Is it acceptable to apply IV.C(2) (alternate cycle visual and non-visual examinations for Moderate category plants) on a nozzle by nozzle basis as opposed to a whole head basis? In other words, for moderate category plants, can compliance be achieved by performing visual OR non-visual NDE for each penetration (each outage), or does the visual OR non-visual NDE have to be performed for all the penetrations in the same outage.

Answer: It is not permissible to apply Section IV.C(2) of the Order on a nozzle by nozzle basis. Licensees with alternative inspection plans should submit them under the requirements of Section IV.F of the Order.

9. It is anticipated that several Licensee's will not be able to achieve the IV.C(5)(b)(i) requirement for ultrasonic testing to 2 inches below the lowest point of the toe of the weld or 1 inch below plus all areas >20 ksi, because of plant specific geometries. However, it is anticipated that many of these Licensee's would be able to ultrasonically test all areas of the nozzle with operating stress level of 20 ksi or greater. Would the NRC consider revising the order to require UT to 1 inch below the weld OR all areas of the nozzle with operating stress level 20 ksi or greater when 1 inch below the weld inspection area cannot be achieved due to plant specific geometries?

Answer: At this time the NRC staff has no plan to revise the First Revised Order. However licensees, as well as any stakeholder can submit supporting information under this topic to the NRC for possible further consideration.

10. Is it the intent of IV.C(5)(b)(iii)1. that "below the J-groove weld" means "below the toe of the J-groove weld"?

Answer: Yes.

11. For IV.C(5)(b)(iii)2., does "above the J-groove weld" mean "above the root of the J-groove weld", or "above the toe of the J-groove weld"?

Answer: Section IV.C(5)(b)(iii)2. "above the J-groove weld" means "above the toe of the J-groove weld."

12. Section IV.A requires the calculation of EDY for "the end of each operating cycle." Once a particular RPV head has reached the "High category," is it necessary to continue to calculate the EDY for the end of each cycle?

Answer: Yes. Performance of EDY calculations provides a susceptibility ranking for NRC staff and inspectors within the High susceptibility category. Continued calculation of EDY values is necessary to ensure the applicability of the time-at-temperature susceptibility model.

13. The previous order only required non-visual examinations to extend to 2 inches above the weld, whereas the revision requires 2 inches above the highest point of the weld in a horizontal plane. Stresses fall off fairly rapidly above the weld (especially more than 1 inch horizontally above the weld), any flaws in the volumes above that likely would have grown from areas examined below it, and the extension to 2 inches above the root of the weld seems primarily to allow the "assessment for leakage into the interference zone." Would an occasional signal dropout or missed scan line in the areas above about 1 inch require a relaxation request?

Answer: Yes. The standard of what would constitute an occasional signal dropout or missed scan line is subjective and variable.

14. Given that plants did not receive the letter and the Order was not posted until Feb. 23, may we consider the due date should be 20 days from February 23rd (March 14), not from February 20th (March 11)?

Answer: Yes. The due date is March 15, 2004 as March 14, 2004 is a Sunday.

15. All plants are required to calculate EDY every refueling outage to determine whether they are in the high susceptibility category. If a plant's calculation indicated the plant had entered the high susceptibility category during a previous operating cycle, recalculation of EDY each outage does not seem to be necessary to make a determination of susceptibility. Is the requirement for plants which have accumulated greater than 12 EDY to continue to update the EDY calculation a typographical error? If a utility desired to perform and use a bounding evaluation of EDY, would the utility need to submit a relaxation from the Order if the utility desired to stop updating the EDY calculation?

Answer: Licensees are required by Section IV.A of the Order to calculate the susceptibility category of their RPV upper head to PWSCC-related degradation, as represented by a value of effective degradation years (EDY) for the end of each operation cycle. NRC staff requires this information to assess the adequacy of the susceptibility model presented in the Order.

16. Are there any other revisions planned for the order?

Answer: No other revisions of the Order are planned at this time.

17. Will different inspection requirements be developed for Alloy 690?

Answer: The First Revised Order inspection requirements are applicable to all nickel-based alloys used in PWR reactor pressure vessel upper head penetration nozzles and related welds.

18. What would be the regulatory mechanism for allowing separate EDY calculations and inspection requirements for RPV Heads containing Alloy 690 material once adequate data is available?

Answer: Currently the NRC staff is drafting a proposed rulemaking plan for Commission approval to integrate the requirements of the Order into 10 CFR 50.55a. If the Commission agrees to go forward with rulemaking, stakeholder input will be accepted and reviewed. The determination of the most appropriate regulatory means to address Alloy 690 inspection requirements will be dependent upon when the technical information is provided.

19. If during the BMV should evidence of boron or corrosive product be identified will the licensee be required to remove support structures at unexamined areas if the boron or corrosive product is not near the unexamined area?

Answer: No, provided no evidence of boron or corrosive product was identified adjacent to, beneath, or downslope from the support structure interference at the locations where the support structure contacts the RPV head surface.

20. If cracking is identified in low or moderate nozzles, when is the licensee required to move into the high susceptibility category?

Answer: Once cracking has been identified in a penetration nozzle or J-groove weld due to PWSCC, the reactor pressure vessel (RPV) upper head is immediately recategorized as HIGH susceptibility and the licensee must perform all required inspections for a HIGH susceptibility RPV upper head during the ongoing outage.

21. Are plants using a plant specific stress analysis and the 1" below the weld examination area required to interact with the NRC?

Answer: Formal submittal for NRC staff review is not required. However, a review of licensee stress analysis may be performed as part of NRC audit of the licensee facilities. Licensees are encouraged to contact NRC staff for clarification if questions regarding stress analysis or inspection requirements arise.

22. Page 7 of Order EA-03-009 indicates PWSCC susceptibility categories. For “replaced” category “...AND no previous inspection findings requiring classification as High.” Is there an example of this situation?

Answer: As of March 1, 2004, there is no example of this situation. No licensee, which has replaced their RPV upper head, has identified inspection findings on their replaced RPV upper head, which would require reclassification as HIGH susceptibility.

23. What is the NRC’s rationale for incorporating the February 11, 2003 version of Order EA-03-009 into a proposed revision to 10 CFR 50.55a?

Answer: The NRC staff is drafting a proposed rulemaking plan for NRC Commission review, that would incorporate the inspection requirements of the First Revised Order, issued February 20, 2004, into 10 CFR 50.55a. One purpose of this rulemaking activity is to solicit stakeholder input for long term effective inspection requirements. The NRC staff acknowledges that ongoing ASME Code activities may affect the inspection requirements that will be addressed in the proposed rulemaking.

24. In paragraph IV.C(5)(a) of NRC Order EA-03-009 it states, “For RPV heads with the surface obscured by support structure interferences which are located at RPV head elevations downslope from the outermost RPV head penetration, a bare metal visual inspection of no less than 95 percent of the RPV head surface may be performed provided that the examination shall include those areas of the RPV head upslope and downslope from the support structure interference to identify any evidence of boron or corrosive product.” Does the description “support structure interferences” include the reflective metal insulation (RMI) attached to the bottom of the support structure (the RMI was specifically included in an SER granting relaxation per the original Order)?

Answer: Support structure interferences do not include associated insulation on a generic basis. However, alternative inspections can be submitted to the NRC on a plant specific basis in accordance with Section IV.F of the Order.

NRC Comment

The Order, through IV.C.(5)(b)(iii), allows the use of penetrant testing, eddy current, and ultrasonic examinations in any combination to cover equivalent volumes, surfaces and leak paths of the RPV head penetration nozzle base material and J-groove weld within the requirements of IV.C.(5)(b)(iii)1 and IV.C.(5)(b)(iii)2.