

RAI 6.2-136, Supplement No. 1 (MFN 07-270, 5/16/07)

The response to this RAI is not specific enough to allow the staff to draw conclusions as to the acceptability of the design of the hydrogen monitors. Also, the information contained in the responses to the RAI and its supplement(s) needs to be put into the DCD, Tier 2.

Here is a detailed description of the additional requested information:

Item (A) a) of the RAI response states that the instrument range will be met under “the specified pressure conditions” for the ESBWR design, yet the response did not include any specified pressure conditions. It is not clear if the “specified pressure conditions” means containment design pressure, pressures resulting from significant beyond design-basis accidents, or something else. Provide the “specified pressure conditions.”

Item (A) b) gives numbers for the instrument accuracies, but the numbers are enclosed in square brackets. Staff is not clear on the meaning of the enclosed square brackets. The conventional meaning of square brackets is that the numbers are suggested or typical values, but that individual plants may choose different numbers based on various design considerations. Provide specific accuracies for the hydrogen monitors and justify that they are adequate for their intended function, or develop a COL Action Item to require COL applicants to do so, subject to NRC review and approval during COL reviews.

Also in item (A) b), the staff had asked the applicant to provide the placement of the monitor’s sampling points, and to justify that this placement is adequate for their intended function. This information was not provided. Instead, the response stated that sampling points “will be selected” according to certain criteria. Provide the specific information that was originally requested, or develop a COL Action Item to require COL applicants to do so, subject to NRC review and approval during COL reviews.

The Item (B) response stated that the equipment warmup time “will be evaluated” during the specification and procurement process to ensure that the warmup time noted in Regulatory Guide 1.7, Revision 3, is not exceeded. Develop a COL Action Item to require COL applicants to do this, subject to NRC review and approval during COL reviews.

For Item (C), the staff had asked whether the monitoring system would remain functional and reliable when exposed internally to the temperature, pressure, humidity, and radioactivity of containment atmosphere during a significant beyond design-basis accident. The response stated that the equipment chosen “will be specified” and “will be evaluated” in accordance with certain general criteria. Provide an evaluation of the system’s functionality and reliability against ESBWR-specific containment temperature, pressure, humidity, and radioactivity conditions during significant beyond design-basis accidents, or develop a COL Action Item to require COL applicants to do so, subject to NRC review and approval during COL reviews.

The staff cautions the applicant that the recommended design provisions for oxygen monitors in the final issue of RG 1.7, Revision 3, section 2.2, are significantly different from those in draft Revision 3, at least in form. If the applicant cites RG 1.7 in the future, the applicant should specify which version (draft or final) is being used.

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The response to this RAI is not specific enough to allow the staff to draw conclusions as to the acceptability of the design of the oxygen monitors. Also, the information contained in the responses to the RAI and its supplement(s) needs to be put into the DCD, Tier 2. Here is a detailed description of the additional requested information:

Item (1) of the RAI response states that the instrument range will be met under “the specified pressure conditions” for the ESBWR design, yet the response did not include any specified pressure conditions. It is not clear if the “specified pressure conditions” means containment design pressure, pressures resulting from significant beyond design-basis accidents, or something else. Provide the “specified pressure conditions.”

Item (2) gives numbers for the instrument accuracies, but the numbers are enclosed in square brackets. What does this mean? A conventional meaning of square brackets is that the numbers are suggested or typical values, but that individual plants may choose different numbers based on various design considerations. Provide specific accuracies for the oxygen monitors and justify that they are adequate for their intended function, or develop a COL Action Item to require COL applicants to do so, subject to NRC review and approval during COL reviews.

Also in item (2), the staff had asked the applicant to provide the placement of the monitor’s sampling points, and to justify that this placement is adequate for their intended function. This information was not provided. Instead, the response stated that sampling points “will be selected” according to certain criteria. Provide the specific information which was requested, or develop a COL Action Item to require COL applicants to do so, subject to NRC review and approval during COL reviews.

For Item (3), the staff had asked whether the monitoring system would remain functional and reliable when exposed internally to the temperature, pressure, humidity, and radioactivity of containment atmosphere during a significant beyond design-basis accident. The response stated that the equipment chosen “will be specified” and “will be evaluated” in accordance with certain general criteria. Provide an evaluation of the system’s functionality and reliability against ESBWR-specific containment temperature, pressure, humidity, and radioactivity conditions during significant beyond design-basis accidents, or develop a COL Action Item to require COL applicants to do so, subject to NRC review and approval during COL reviews.

The staff cautions the applicant that the recommended design provisions for oxygen monitors in the final issue of RG 1.7, Revision 3, section 2.2, are significantly different from those in draft Revision 3, at least in form. If the applicant cites RG 1.7 in the future, the applicant should specify which version (draft or final) is being used.