Technical Comments:

The wording in the Draft SE and MRP-169-1 has been provided below for comparison.
The language in the draft SER pertaining to crack tip stress intensity factor occurring on page 11 is as follows:

28 "The NRC staff asked NEI to provide an additional basis, including supporting data, analyses, 29 and operational experience, to support allowing an inside surface stress threshold of 10 ksi. By 30 letter dated November 30, 2009, NEI responded that since there is no generally accepted 31 PWSCC crack growth threshold for Alloy 82/182 weld metals, satisfying this criterion generally 32 requires that the crack tip stress intensity factor, due to residual stresses, operating pressure 33 and sustained, steady-state loads, be compressive up to the greater of the maximum flaw size 34 (either pre- or post-overlay) or the maximum flaw size in PWSCC-susceptible material that could 35 be missed by the applicable inspections. <u>The NRC staff believes that the crack tip stress 36 intensity factor shall be compressive up to the greater of the maximum flaw size detected (both 37 pre- and post-overlay) or the maximum flaw size that the NDE procedure is not performance 38 demonstration initiative (PDI) qualified to detect</u>."

The same language is repeated on p14:

35 In its November 30, 2009, letter, NEI states that a PWSCC crack growth criterion should be 36 satisfied to demonstrate the acceptability of the post-weld overlay residual stress distribution. 37 This criterion requires that any cracks detected in the pre- or post-overlay inspections, or that 38 are not within the examination volumes in the PWSCC-susceptible material, would not grow 39 because of PWSCC to the point that they will violate the overlay design basis (75-percent 40 through-wall for OWOLs or 100-percent through-wall for FSWOLs). Since there is no generally 41 accepted PWSCC crack growth threshold for Alloy 82/182 weld metals, satisfying this criterion 42 generally requires that the crack tip stress intensity factor (resulting from residual stresses, 43 operating pressure and steady-state loads) be compressive up to the greater of the maximum 44 flaw size (either pre- or post-overlay) or the maximum flaw size in PWSCC-susceptible material 45 that could be missed by the applicable inspections. <u>Again, the NRC staff believes that the crack 46 tip stress intensity factor shall be compressive up to the greater of the maximum flaw size 47 detected (both pre- and post-overlay) or the maximum flaw size that the NDE procedure is not 48 PDI qualified to detect.</u>

The underlined words in the above paragraphs indicate the Industry concern. These words indicate that the NRC staff has taken a general recommendation in MRP-169-1 and made it a firm requirement. These words are also repeated in the summary section (p25, lines 19 & 20 and p26, lines 16 and 17).

The language in MRP-169-1 pertaining to this crack tip stress intensity factor topic in Section 4.2 is as follows:

"A separate PWSCC crack growth criterion must also be satisfied to demonstrate the acceptability of the post-weld overlay residual stress distribution. This criterion requires that any cracks detected in the pre- or post-overlay inspections, or that are not within the examination volumes in the PWSCC susceptible material, would not grow by PWSCC to the point that they would violate the overlay design basis (75% through-wall for OWOLs or 100% through-wall for FSWOLs). Since there is no generally accepted PWSCC crack growth threshold for Alloy 82/182 weld metals [45], satisfying this criterion generally requires that the cracktip stress intensity factor due to residual stresses, operating pressure and sustained, steady-state loads, be compressive up to the greater of the maximum flaw size detected (either pre- or post-overlay) or the maximum flaw size in PWSCC susceptible material that could be missed by the applicable inspections."

The underlined words in the above paragraphs are the industry position regarding stress intensity factor at the crack tip. The requirement is that the crack growth be acceptable for the life of the overlay, and a subsequent statement that to meet this requirement the crack tip stress intensity factor must generally (but not always) be compressive. The industry is not sure if the staff's intent was to specify a compressive stress intensity factor, since this requirement was not included in Section 4 (Limitations and Conditions) of the Draft SER.

In a recently completed and approved relief request for FSWOL and OWOL applications, an approved SER was issued that included the crack growth requirement stated in MRP-169-1, but not the additional requirement that stress intensity factor be compressive, and for at least one nozzle, the design was able to meet the crack growth requirement even though the crack tip stress intensity factor was tensile. If the above words that translate a general recommendation of MRP-169-1 into a requirement remain in the SER, the industry expects that there will need to be plant specific relief requests and approvals to address this subject in the future, similar to that obtained for the above stated overlay application. Also, based the May 4, 2010, ASME Code meeting, ASME Section XI does not plan to put a compressive crack tip stress intensity factor requirement into the applicable Code Cases for FSWOLs and OWOLs (N-740 and N-754).