

USED FUEL STORAGE AND TRANSPORTATION ISSUE RESOLUTION PLAN**Issue Number:** N-10-01**Title:** Dry Spent Fuel Storage Canister Chloride Induced Stress Corrosion Cracking**I. Summary of Resolution Plan**

Industry and NRC will interact in public meetings and through letters to achieve the following:

Consistent with the data acquired, the following are determined and documented:

1. The conditions of canister materials and environment under which CISCC could potentially initiate.
2. The time scales under which CISCC could occur, based upon actual atmospheric and cask conditions.
3. Agreed upon Susceptibility Assessment Criteria that can be used by licensees to evaluate the potential for CISCC to occur on canisters at their site.

II. Actions and Due Dates

| ACTION | RESPONSIBLE PARTY | DUE DATE/STATUS |
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| 1. Public meeting to discuss the data acquired in NRC and EPRI research | NRC/Industry | Completed – 3/14/2011 |
| 2. Industry develop draft criteria for the minimum conditions defining a chloride atmosphere under which SCC of canister confinement boundary made of austenitic stainless steel (304, 304L, 316L) could occur (e.g. relative humidity, chloride concentration in air, distance from salt water, cask surface temperature), and a method for determining the condition based time scale under which CISCC could occur (e.g. screening criteria) | Industry | Completed – February 2012 |
| 3. Public meeting for industry to present plans for acquiring field data. | NRC/Industry | Completed – 2/14/2012 |
| 4. Public meeting for 1) NRC to present technical data and regulatory questions, and 2) Industry to present conceptual screening criteria identifying the minimum conditions necessary for potential initiation of CISCC and a method for determining the condition based time scale under which CISCC could occur. | NRC/Industry | Completed – 4/12/2012 |
| 5. Perform pilot acquisition of field data (e.g. cask surface temperature, relative humidity, chloride content, and atmospheric parameters) at Calvert Cliffs Nuclear Station. This pilot will demonstrate the feasibility of acquiring certain data, be used to inform development of a more robust program, and provide useful data for addressing information gaps. which will support the basis of the condition based time scales under which SCC could occur; future plans to acquire field data will be based in part on the need for information to inform the screening criteria | EPRI/Industry | Completed – 6/27&28/2012 |
| 6. Public meeting to provide update on industry's plans/actions including: 1) proposed update to | Industry/NRC | Completed – 12/18/2012 |

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| RIRP resolution plan, 2) R&D Roadmap, and 3) pilot data acquisition results and plans for future inspections. Discussion to obtain NRC feedback on industry's plans. NRC update of related activities. | | |
| 7. Develop an draft R&D roadmap (referred to as Master Plan at 4/12/2012 meeting) for acquiring data necessary to fill-in gaps for understanding the condition based time scales under which SCC could occur. R&D Roadmap will start with the gaps identified in the Conceptual Screening Criteria, and will identify R&D being performed by industry, NRC, DOE, and others; as well as how/when this R&D is projected to result in data sufficient to close the RIRP. | EPRI/Industry | Completed – 1/31/2013 |
| 8. Submit draft R&D Roadmap for NRC feedback. | EPRI/Industry | Completed – 1/31/2013 |
| 9. Submit proposed update to RIRP screening form and resolution plan (Revision 2) to NRC, which incorporates feedback from public meeting. | NEI/Industry | Completed – 1/31/2013 |
| 10. Provide comments on proposed update to RIRP screening form and resolution plan for industry to incorporate. <u>OR</u> If NRC agreement on proposed forms, RIRP screening form and resolution plan Revision 2 are finalized. | NRC | Completed - March 2013 |
| 11. If NRC comments on proposed screening form and resolution plan, incorporate and finalize RIRP resolution plan Revision 3. | NEI/Industry | Completed – 5/28/13 |
| 12. Provide comments on draft R&D Roadmap. | NRC | Completed – 7/30/13 |
| 13. Finalize R&D Roadmap, incorporate NRC comments. | EPRI/Industry | Completed - March 2014 |
| 14. Collect/consolidate data per R&D Roadmap (including EPRI acquisition of actual canister data). Evaluate data from actual canisters in comparison to that from NRC sponsored research. Develop screening criteria as additional data becomes available. Monitor all R&D and update Roadmap as necessary. Assess when sufficient data exists to resolve RIRP. | EPRI/Industry | Ongoing |
| 15. Review NRC sponsored research at SwRI/CNWRA to identify and evaluate any data that may be relevant to this RIRP. | NRC | Completed – 1/24/14 |
| 16. Periodic NRC/Industry public meetings to: 1) present updates on R&D and discuss development of data sufficient to close RIRP (including updates to conceptual screening criteria), 2) exchange information to increase the value of R&D activities (e.g. industry provide NRC with weld data for typical canisters), 3) discuss whether the RIRP resolution plan needs to be updated, and 4) discuss whether sufficient data exists to close the RIRP. | NRC/Industry | Every 6 months. Most recent meetings held 1/24/14, 8/5/2014 and 4/20/2015. Next meeting anticipated in late 2015 |
| 17. Finalize, and send to NRC, Industry Susceptibility Assessment Criteria that can be used by ISFSI licensees to evaluate the potential | NEI/EPRI/Industry | September 2015 |

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| for CISCC to occur on canisters at their site. | | |
| 18. NRC review and provide written comments on Industry Susceptibility Assessment Criteria | NRC | 60 days after receipt of Industry's Susceptibility Assessment Criteria |
| 19. Industry address NRC comments. | Industry | 30 days after receipt of NRC comments |
| 20. Submit proposed RIRP closure form to NRC. | NEI/Industry | Upon finalization of Susceptibility Assessment Criteria |
| 21. Provide comments on proposed closure form for industry to incorporate. <u>OR</u> If NRC agreement on proposed closure form, RIRP closure form is finalized. | NRC | 30 days after submission |
| 22. Finalize RIRP closure form (if necessary to address NRC comments). | NEI/Industry | Upon resolution of comments |
| 23. Once the RIRP is closed, industry will define the path forward for applying the Susceptibility Assessment Criteria. This path forward will address any procedures and capabilities needed to implement the criteria. Industry will seek NRC feedback on the implementation of the criteria in a public meeting or meetings. | NEI/Industry | TBD |

III. Date: 7/22/2015