

***University of Missouri
Research Reactor (MURR)
License Renewal Experience***

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Research Reactor***

Facility Overview

- Location: Just off the main campus of the University of Missouri, Columbia, Missouri
- Design: Pressurized, reflected, open pool-type, light-water moderated and cooled
- Purpose: Multi-disciplinary research and education facility also providing a broad range of analytical and irradiation services

Facility Overview

- 1966: First achieved criticality in October – licensed to operate at 5 MW
- 1974: Power uprate to 10 MW
- 1977: Started \geq 150 hours/week operation
- 2006: Submitted license renewal application to the NRC on August 31

Relicensing Timeline

Request for Additional Information (RAI):

- July 2009: Decommissioning and Financial (4 questions - 60 days to respond)
- December 2009: Reference Material (1 question - 20 days to respond)
- December 2009: Environmental Report (4 questions - 30 days to respond)

Relicensing Timeline

Request for Additional Information (RAI):

- April 2010: National Historic Preservation Act (6 questions - 30 days to respond)
- May 2010: Technical - Complex (19 questions - 120 days to respond)
- June 2010: Technical (167 questions - 45 days to respond)

Comments/Observations

- Due to delay in starting the NRC review process, many questions dealt with updating previously submitted information
- Very large number of questions, of varying complexity – limited resources to answer in time allotted

Comments/Observations

- Some questions required significant amount of computer code work – very resource intense
- We felt some questions had already been answered, needed to direct reviewer to location in the Safety Analysis Report

Comments/Observations

- Increase in the number of site visits to discuss questions could be beneficial – only 2 have occurred thus far
- For common design features among the reactors, a lesson learned database would be beneficial to the research reactor community

Comments/Observations

- Discrepancy found in Safety Limit Analysis while answering a relicensing question – required significant resources to be redirected on submitting a License Amendment
- Need more realistic timelines to answer the RAIs

Comments/Observations

- Very fortunate to have great support from Argonne National Laboratory – LEU Fuel Conversion Project
- Good support from our Senior Project Manager – constant contact
- NRC staff very understanding of our requests for additional time to respond to remaining questions

Current Status

- 6 questions remain unanswered – 5 requiring RELAP thermal-hydraulic code work and the other requiring support from MU Mechanical Engineering
- Partial rewrite of Chapter 4 is also required based on the Safety Limit Amendment
- Next deadline is April 13, 2012

***Thank you for your attention,
Questions?***