

Lessons Learned from Licensing the Oregon State TRIGA Reactor

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Oregon State TRIGA Reactor

- 1MW_t TRIGA Mark II reactor
- Original license 1967
- Conversion process started two years after license renewal application



License Renewal Timeline

1/2003	Safety Analysis Review (SAR) begins
10/2004	License renewal application submitted
9/2006	Conversion SAR (CSAR) work begins
10/2006	First Request for Additional Information (RAI) for license renewal
11/2007	CSAR submitted
9/2008	NRC issues license renewal/conversion

What Worked Well

For OSU:

- Developed extraordinary in-depth knowledge of facility design and performance characteristics
- Increased involvement with faculty/students
 - Phenomenal real-world experience for nuclear engineering students
 - Reinforced working relationship between reactor and academic unit

What Worked Well (cont.)

For OSU/NRC:

- Face-to-face meetings between the NRC Project Manager, NRC reviewer and licensee vital in handling responses to RAIs
- Provided time after RAIs issued for licensee to formulate responses before meeting (i.e., have answers in hand)

What Didn't Work Well

- Initial NRC license renewal effort was a false start:
 - Not directed by NRC Project Manager
 - Slow progress
 - Completely new set of RAIs after Project Manager assumed leadership
- Not enough reviewers

What Didn't Work Well (Cont.)

- NRC Management significantly underestimated the workload brought about by the conversions
- These pressures likely contributed to the loss of RTR experienced staff in recent years

Lessons Learned

- End result - accident doses less than 10 CFR 20.1301(a)(1) (i.e., < 100 mrem)
- For OSU, 85% of the licensing/conversion effort went into:
 - Chapter 4, Reactor (Core) Description
 - Chapter 13, Accident Analysis

Lessons Learned (Cont.)

- For OSU, 95% of the RAI effort went into:
 - Chapters 4 and 13
- The other chapters were either summaries of existing procedures or the training manual

Lessons Learned (Cont.)

- Consider consolidating latest generation of analyses into a reference document so that the effort does not have to be repeated for smaller facilities.
- In hindsight, license renewal should not take more than two years once application is submitted to the NRC.

Lessons Learned (Cont.)

- Additional staff could be assigned temporarily under the direction of each facility's program manager who acts as the "filter"