

Teaching Notes

Operational Reactor Safety Course

Lecture: 23 – Current Regulatory Issues

Objective:

While the US nuclear plants are operating at exceptional capacity factor levels and the industry is now considering the construction of new plants, many new and long standing technical and regulatory issues exist that need to be resolved. The objective of this lecture is to provide a high level review of some of these issues to remind students that safe nuclear operations requires constant vigilance and action.

Key Points to Bring Out:

<u>Slide number</u>	<u>Points</u>
2	This slide provides an overview of some of the key regulatory issues being addressed by the NRC. Point out the role of enhanced security due to the 9-11 attacks and recent ground contamination events that have occurred that raise the question of safety culture and addressing problems on a timely basis.
3	Although not new, reactor vessel integrity is important since it is the most lifelimiting component that can not be easily replaced. With license renewals, this could become important again.
4	PWR sump performance. This issue was thought to be settled but recent new information has raised the issue again. Recall past lectures of the importance of the sump recirculation system for post accident cooling of the core and containment.
5	Primary coolant system weld issues for various welds containing certain alloys needs constant inspection and repair in terms of overlays.
6	Fire protection is again important due to new test results of a certain type of insulation Hymec. Since NRC published Appendix R, numerous difficulties have arisen in terms of demonstrating compliance. New criteria are being developed. Use of fire PRAs

is being encouraged to balance risk understanding of key system failures.

- 7 New challenges and regulatory requirements for security and terrorism are costing utilities billions of dollars to upgrade plants to new design basis threats. Explain what is being done to reflect what is available in the public literature.
- 8 Ground water contamination are large public perception impact events that almost shutdown Brookhaven National Laboratory even though the health impact was minimal. The lesson of these events is to address even insignificant issues promptly that can become large public problems.
- 9 Go over the details of NRC's enforcement process to appreciate NRC responds to violations - self identified by the utility and those of the NRC. Note the role of the utility response in how NRC responds - role of the Corrective Action Process. Also note use of the Reactor Oversight Process and the Significance Determination Process.
- 10 The purpose of this important slide of an enforcement action is to show that violation involved a failure of the utility to take timely corrective action under Appendix B which is the appendix that deals with Quality Assurance programs.
- 11 The next example of enforcement action is to point out how seemingly insignificant things such as painting something, led to a system failure. This shows the importance of specificity in maintenance work particularly on safety significant equipment.
- 12 The key point in this summary slide is the need for vigilance and constant attention to detail and the importance of NRC oversight to assure compliance. The role of the industry should also be mentioned as part of the long term technical resolution of generic issues for the industry which will continue as long as plants are operating.

There are many more issues that could be discussed as they emerge. I would suggest reviewing the list of open generic issues for a status of how the industry and NRC is doing to resolve them and when.

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22.091 / 22.903 Nuclear Reactor Safety
Spring 2008

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