

PRESSURIZED WATER REACTOR SUMP PERFORMANCE

GSI-191 RESOLUTION

Introduction/Background

I am John Hannon, Chief of the Plant Systems Branch in the Office of Nuclear Reactor Regulation. I will discuss the sump performance issue at pressurized water reactor facilities. First, I am going to give you a brief background, then explain actions we have taken to maintain safety, and last describe our long-term plans for resolution. Until long-term resolution is achieved, we have taken interim actions to reduce potential risk and assure public health and safety.

I want to assure you and our stakeholders that the plants are safe.

An event in 1992 at a Swedish boiling water reactor caused us to focus on the resolution of strainer performance at boiling water reactors. The strainers in boiling water reactors are comparable to the sumps at pressurized water

reactors. The boiling water reactor licensees addressed this issue by installing suction strainers with much larger surface areas. We recognized that additional research was needed before a final conclusion could be reached regarding the potential to clog sumps at pressurized water reactors.

Our Office of Research completed its technical assessment of this issue and transmitted it to us in September 2001.

The assessment used a combination of plant-specific and generic information to model sump performance. A lack of plant specific data precluded its use on a plant-specific basis. The assessment concluded that sump clogging was a plausible generic concern for pressurized water reactors and that regulatory action may be warranted. The results of the research pointed out the need for plant-specific analyses to be conducted to determine if sump performance issues exist at individual facilities. The research did not account for specific design features at some plants that improve sump performance, such as: primary piping that is

approved for leak-before-break; specific operator actions that can reduce the likelihood of sump failure; and, compensatory actions licensees are taking to further assure sump performance. Based on the evidence we have at this time, continued operation is justified until the plant-specific analyses are completed.

What we are doing to maintain safety

We met with industry representatives to present our technical concern and both we and the industry committed to pursuing the issue. The industry took the initiative to develop guidance for plant-specific evaluations. We reviewed the first guidance document for acceptability, Nuclear Energy Institute (NEI) 02-01 “Condition Assessment Guidelines”. NEI 02-01 is currently being used by licensees to collect information on their sumps and containment design.

We also recently issued for public comment Regulatory Guide 1.82, Revision 3, *Water Sources for Long-term Recirculation Cooling following a Loss of Coolant Accident*.

This Regulatory Guide provides the industry with the most current guidance on sump availability and long-term cooling.

Recognizing the limitations of the generic studies that formed the technical basis for this issue, we commissioned a follow on study to evaluate the potential risk and to determine how much recovery actions lessened the potential for sump clogging. This study demonstrated that effective recovery actions could significantly reduce the potential risk of sump clogging.

This new information prompted us to issue Bulletin 2003-01.

In the Bulletin, we asked pressurized water reactor licensees to either confirm their compliance with existing regulatory requirements, or describe interim risk reduction

measures they would put in place to reduce potential risks associated with sump performance. If, while taking appropriate risk-reduction measures, a licensee discovers that they are not in compliance with our regulations, they are required to take prompt corrective action. This has occurred at three plants so far. Until a long-term solution is achieved, such actions and risk-reduction measures will greatly reduce potential risks and help to assure public health and safety. We are implementing a plan to communicate this information and we have constructed a WEB site to keep our stakeholders informed of our regulatory activities.

What we are planning to do

At this time, we have received, and are reviewing, plant-specific responses to the Bulletin. The compensatory measures that licensees are taking provide additional assurance of plant safety while we continue to formulate the final resolution. We are also working with our regional offices to perform inspections to independently verify that

these compensatory measures are implemented.

Appropriate enforcement will be taken if compliance issues are found. This is why we are confident that the plants are safe. I want our stakeholders to know this as well.

By the end of this month, NEI committed to submitting its second guidance document. This document will describe methodologies for evaluating susceptibility to sump clogging based upon the information collected in accordance with NEI 02-01. We will evaluate this guidance document as well to ensure its acceptability.

As part of our long-term resolution, we are preparing a generic letter that will request licensees to provide an evaluation of their sump performance and take appropriate corrective actions. We will monitor licensees' activities to ensure adequate sump performance. We will perform in-depth reviews on a sampling basis. By this means we will

independently verify that licensees have implemented appropriate corrective actions.

In addition to the activities I just described, we chartered a task force to help coordinate our efforts on this issue. This task force will assess our approach and recommend appropriate adjustments in our course of action. They are also looking for ways to strengthen our communication plan so we can get the correct message out to our stakeholders. Numbers quoted in the press recently have suggested that the chance of an accident over the next several years is high enough to warrant immediate regulatory action. These numbers were taken out of context and do not represent the risk to the public.

Summary

We are following a deliberate, well-established regulatory process to resolve a complex safety issue. Until long-term resolution is achieved, interim actions will greatly reduce

the potential risks and help to assure public health and safety. Our inspections will ensure that compensatory actions are implemented. Our in-depth reviews of corrective actions will ensure that sump performance is adequate. This is why I can say to you today that the plants are safe.