

THE NRC'S "SIGNIFICANCE DETERMINATION PROCESS"

The "Significance Determination Process" (SDP) is an organized, planned process used by the NRC to evaluate the risk or safety significance of conditions, events or findings at nuclear power reactors. The process is described in detail in the NRC Inspection Manual, Manual Chapter 0609, which is a publicly available document.

The SDP goes hand-in-hand with the Reactor Oversight Process, the NRC's continuous evaluation of reactor performance using a combination of Performance Indicators (PIs) and inspections. There are thresholds for the Performance Indicators. If they are exceeded, the NRC takes actions to focus attention where there is a potential decline in licensee performance. Likewise, the SDP uses inspections to assess information about performance deficiencies. The process can become quite complex, factoring in design details and statistical information from individual plant probabilistic risk assessments. For example, to estimate the increase in conditional core damage frequency related to some performance deficiency, the Appendix for the SDP for power reactor operations (one of nine appendices) contains 21 pages of instructions. Again, the intention is to focus attention where there is an actual or potential performance decline.

Some deficiencies may be found not to have any risk significance. These are not documented in inspection reports. However, if the documentation threshold is met (this is the same as the PI threshold) the screening process is applied. The finding or findings are classified into one of four color-codes. The color codes, in order of increasing significance, are: Green (very low), White (low to moderate), Yellow (substantial) and Red (high).

The purposes of the SDP include providing the bases for assessment of enforcement actions for individual or related findings, and accumulating information over time for an overall performance assessment. NRC inspectors perform the initial classification; however, for any findings which are initially classified as "greater than Green," a review panel is convened to perform a preliminary safety significance assessment. The panel may classify the finding as Green, which would be a final classification. If the classification is other than Green, the licensee will be given an opportunity to accept the staff's decision or to provide further information or perspectives. Both these actions are documented with the inspection report.

In some cases, the assessment of issues potentially greater than Green may not be finished by the time the inspection report is issued. These findings will be described as items for which the significance determination is "to-be-determined." The ten findings made during the special inspection following up the Davis-Besse Augmented Inspection Team inspection, were all classified as "to-be-determined" pending a final overall significance determination of the reactor vessel head degradation issue.

If the licensee provides additional information, or if information is received from other sources to enable finalization of the significance determination, then NRC regional staff with headquarters staff participation will make the final determination after considering this information. The final determination is subject to appeal under a defined set of procedures.

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