From: Stuart Richards
To: Fields, Leslie; Miller, Chris
Date: 5/29/2007 1:08:35 PM
Subject: ROP One Pager (G20070381)

Leslie

See attached one-pager on the ROP in response to G20070381.

Thanks
Stu

CC: Boger, Bruce; Collins, Elmo; Dyer, Jim; Koltay, Peter; Reis, Terrence

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Subject: ROP One Pager (G20070381)
Creation Date 5/29/2007 1:08:35 PM
From: Stuart Richards

Created By: SAR@nrc.gov

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Reactor Oversight Process Development

The Reactor Oversight Process (ROP) was developed to address Congressional, industry, and public criticism that arose in the mid 90's that the NRC inspection program was far too subjective and too often focused on issues that were of little direct safety significance. Therefore the ROP was designed to be systematic, objective, predictable, and focused on areas of relatively high significance. The ROP was implemented in 2000.

The ROP divides the NRC oversight of reactors into seven cornerstones of safety. The cornerstones were chosen to: (1) limit the frequency of initiating events; (2) ensure the availability, reliability, and capability of mitigating systems; (3) ensure the integrity of the fuel cladding, reactor coolant system, and containment boundaries; (4) ensure the adequacy of the emergency preparedness functions; (5) protect the public from exposure to radioactive material releases; (6) protect nuclear plant workers from exposure to radiation; and (7) provide assurance that the physical protection system can protect against the design-basis threat of radiological sabotage. Acceptable licensee performance in these cornerstones should provide reasonable assurance that adequate protection of public health and safety is met.

For each cornerstone, performance indicators were developed which would provide a common set of metrics with which to monitor licensee performance on a quarterly basis. This data is provided to the NRC by the industry on a voluntary basis. In addition, inspection requirements were identified for each cornerstone, to be addressed by the regional inspection staffs. The inspection element was developed to be performance based to the degree possible, and to minimize the inspection of licensee programmatic aspects alone.

The combination of the performance indicators and the inspection results are used to assess licensee performance in each cornerstone, and collectively to assess overall performance of each operating nuclear unit. Working with the industry and public stakeholders, thresholds were developed for each performance indicator to define the point at which the color assigned to the indicator would change from Green to White to Yellow to Red, as performance declines.

To objectively assess the results of inspections, the Significance Determination Process was developed. Specific assessment "tools" have been developed for each cornerstone in order to predictably define a significance level for each inspection finding. These SDP tools have been expanded and refined since the initial ROP implementation. The industry played a major role in the development of this process, including the definition of thresholds for changing colors of findings.

To the extent possible, Probabilistic Risk Assessment (PRA) information is used in the SDP tools. This provides a more quantitative assessment, and minimizes subjective judgement.

The cornerstones of Emergency Preparedness, Occupational Radiation Protection, Public Radiation Safety, and Physical Protection can not relate the significance of their findings to core damage or containment failure risk. Therefore these cornerstones use other rationale for assigning significance. The SDP tools and the thresholds were qualitatively risk-informed by expert panels made up of subject matter experts. In part, the color assigned to conditions or events correlated to the level of NRC regulatory response that was considered appropriate.

All inspection findings with potential significance of White, Yellow, or Red are reviewed by the Significance and Enforcement Review Panel (SERP). This panel consists of both regional and HQ staff, and in part ensures consistency between the regional offices.

Licensees are offered the opportunity to comment on the staff’s preliminary significance determination. However, one principle of the process is that it should guide inspection resources in a timely manner. Therefore the staff makes the final decision based on best-available information, rather than initiating a longer term effort to develop additional information.