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Draft Safety Culture Policy Statement

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To Carol Gallagher
c/o United States Nuclear Regulatory Commission

Dear Ms. Gallagher,

In accordance with notice in the federal register (Vol. 74, No. 214), enclosed please find my comments relative to the NRC draft policy statement on safety culture.

Generally speaking, I think the draft policy statement is well written and focused in the right areas, based on my review, a few areas may require further clarification:

1. The proposed policy as written gives several graphic examples of organizations with deficient safety cultures, including Davis Besse, a particularly egregious example, and Peach Bottom (reference page 57526). Pages 57528-57529 discuss attributes associated with a positive safety culture, however, no metrics are addressed, for example, how would "ownership" or "continuous learning" be measured? This is not an easy task, for example several International Nuclear Safety Group (ISAG) documents (e.g., ISAG-4) have been criticized for this same thing.¹ Clearly, the effects of a strong safety culture at operating nuclear power plants are different than the effects at a new nuclear facility under construction (e.g., power plant, waste facility, fuel facility). For example, at an operating nuclear plant, a strong safety culture should be reflected (e.g., reducing human errors, failure/unavailability of component/system) in the level 1, 2 and 3 probabilistic risk assessments (PRA) for the facility.² Conversely, at a facility under construction, no PRA exists—thus this key metric is absent—with nothing to take its place. I believe this issue is important, especially given the current environment of new nuclear power plant construction (e.g., VC Summer Units 2 & 3, Vogtle Units 3 & 4). Compounding the issue is the fact that the term "safety culture" was not formally defined term in the nuclear industry prior to the accidents at TMI Unit 2, and

¹ See J.N. Sorensen "Safety Culture: a survey of the state-of-the-art". Reliability Engineering & System Safety 76, (2002), pps. 189-204.

² Ibid. Page 193-194.

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Chernobyl.³ As such, there is little if any historical data in the commercial nuclear power field that licensees and contractors could rely for large construction projects relative to a historical perspective of a large construction project exhibiting a strong safety culture. From my own perspective, safety culture is a concept far more expansive and elusive than schedule, costs, and the lack of allegations. I think it is important for the NRC to provide examples along with meaningful-measurable attributes.

2. Page 57526, 1st column, first paragraph, emphasizes the vertical component of safety culture, specifically, that it permeates all portions of the project (i.e., licensees, contractors, subcontractors). For many subcontractors, safety culture is a very esoteric and labor intensive concept. I would suggest that this area of the regulation be expanded to address a “graded approach” to the concept of safety culture. For example in new construction, typically a licensee chooses a specific design (e.g., Westinghouse AP 1000) followed by selection of a construction firm, which is responsible for engineering, procurement, construction, installation, and testing. The construction firm then awards contracts to various suppliers for specific components (e.g., main stem isolation valves, steam generators), who in turn award work to their sub-suppliers, etc, etc. Ideally, safety culture should permeate the entire supply chain assuming each entity is supplying a “basic component” (10 CFR 21), however reality may dictate otherwise. As such, it may be beneficial to both the NRC, and licensees, to expand proposed policy statement to recognize the practical differences in safety culture relative to different positions in the supply chain.
3. It is common practice for licensees and contractors to perform formal quality assurance audits of vendors supplying basic components.⁴ These audits usually include the applicable criteria of 10 CFR 50 Appendix B, NQA-1, ASME Section III, etc; additionally, these audits also review suppliers procedures relative to the requirements of 10 CFR 21. The proposed policy document is silent on this issue—stated differently—I think the NRC should provide specific direction relative to a formal verification process (e.g., audit) that licensees and contractors should follow when reviewing safety culture programs for their suppliers (e.g., engineering organization, pump or valve supplier) and sub-suppliers (e.g., geophysics, weld filler material) that supply basic components.
4. Page 57527, 3rd column, 3rd paragraph, states the relationship between safety and security issues. Key attributes of a coherent safety culture system include the ability of individuals to raise issues, the conduct of subsequent investigations, and a feedback loop relative to the individual(s) bringing forth the concern(s). However, in the area of plant security, the feedback loop may not be possible due to required clearances relative to security safeguards information (meaning the person(s) bringing forth the

³ As well as the Challenger and Columbia accidents.

⁴ Reference 10 CFR 21.

concern lack to clearance to be briefed on the outcome of the investigations related to the stated concern(s)). The regulation should address this area for all facilities subject to security safeguards.

Thank you,

Christopher E Hartz