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To: WNP3.LAW - Len Wiens, NRR  
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Subject: 70.24 exemption

Based on recent agreements between NRR and NMSS, attached are additional responses that are needed to grant exemptions. Items 2, 5, 6, and 7 seem appropriate for St. Lucie to respond to.

AREAS TO BE ADDRESSED IN REQUESTS FOR  
EXEMPTIONS FROM CRITICALITY MONITOR REQUIREMENTS OF 10 CFR 70.24

- 1) Procedural controls and/or physical constraints imposed for precluding inadvertent criticality of fresh fuel during fuel handling, inspection, and movement prior to storage in the fresh fuel racks.
- 2) Possible sources of water during fuel handling and storage.
- 3) Maximum enrichment (or k-infinity) of fuel analyzed for storage in fresh fuel racks and the effects of complete flooding (k-eff no greater than 0.95) and low-density optimum moderation (k-eff no greater than 0.98) accident conditions.
- 4) Maximum enrichment (or k-infinity) of fresh fuel analyzed for storage in spent fuel pool and the effects of accident conditions (k-eff no greater than 0.95).
- 5) Other forms of special nuclear material, in addition to nuclear fuel, used and/or stored (e.g., nuclear instrumentation, Health Physics sources, Quality Control radiography sources, etc.) and comparison with amounts specified in 10 CFR 70.24 (a).
- 6) Verification that at least one radiation monitor and criticality alarm that meets the detection criteria (paragraph 5.6) and sensitivity criteria (paragraph 5.7) in ANSI/ANS 8.3-1986 is provided in those areas where fresh reactor fuel is handled, moved, or may be present outside of fixed racks and containers (except during movement between the new fuel storage racks, the reactor vessel, and the spent fuel pool). In determining the detection capability of the monitor, a neutron-to-gamma dose (measured in rads) ratio of 0.3 should be assumed. Double coverage of all areas would not be required, but single reliable coverage of handling areas and a low false alarm rate are needed.
- 7) Discussion of training provided to personnel in responding to area radiation monitors or portable systems.
- 8) Discussion of why would exemption remain valid for future enrichment increases?