

INFORMATION NOTICE 2018-05
LONG-TERM FISSILE MATERIAL ACCUMULATION DUE TO
UNANALYZED OR IMPROPERLY ANALYZED CONDITIONS AT
FUEL CYCLE FACILITIES

Christopher Tripp, Ph.D., Senior Nuclear Process Engineer
Programmatic Oversight & Regional Support Branch
Division of Fuel Cycle Safety, Safeguards, and
Environmental Review

OVERVIEW

- ADDRESSEES
- DESCRIPTION OF CIRCUMSTANCES
- REGULATORY BACKGROUND
- DISCUSSION

ADDRESSEES

Facilities licensed under:

- Title 10 of the Code of Federal Regulations (10 CFR) Part 70, “Domestic licensing of special nuclear material”
 - Holders or applicants of a construction permit or operating license for production facilities, including the production of medical isotopes.
 - 10 CFR Part 40, “Domestic licensing of source material” (no criticality hazards but may be useful)
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DESCRIPTION OF CIRCUMSTANCES

- NRC staff identified recent operating experience involving unanticipated, long-term accumulation of fissile material in uncontrolled geometry systems due to improper analysis of credible plant conditions.
 - July 2017 - unexpected fissile material in desiccant filters
 - Information Notice (IN) 2015-08
 - Unexpected fissile solution in a junction box
 - Catch tray piles that exceeded height limits
 - IN 2016-13
 - Accumulation of fissile material in excess of established criticality safety limits in a scrubber

REGULATORY BACKGROUND

- Subpart H of 10 CFR Part 70
 - 10 CFR 70.61(b) requires that the risk of each credible high consequence event be limited such that its likelihood of occurrence is highly unlikely.
 - 10 CFR 70.61(d) requires that the risk of nuclear criticality accidents be limited by assuring that all nuclear processes will be subcritical under both normal and credible abnormal conditions.

DISCUSSION

- Regulatory requirements necessitate that, through the ISA, a licensee evaluates all credible pathways that could potentially lead to a consequence of concern.
- Licensees encouraged to consider:
 - credible events or conditions whose likelihood has either been underestimated or not considered; and
 - analysis for areas perceived as low risk, which have no controls applied, may have unchallenged or unverified assumptions.



QUESTIONS?
