Fuel Cycle Facility Licensing

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GTRI Reactor Conversion Program

Assumption from Conceptual Process Description

- Material will be Category III (10 CFR 70.4)
- SNM of Low Strategic Significance
- Less than 10% enrichment
- 10,000 grams or more of U-235

Regulations

- 10 CFR 70 Special Nuclear Material
- 10 CFR 51 NEPA Implementation
- 10 CFR 20 Radiation Protection
- 10 CFR 40 Source Material
- 10 CFR 73 Physical Protection
- 10 CFR 74 Material Control and Accounting

Part 51 NEPA

- 51.20(a)(7) EIS for a fuel fabrication license
- 51.20(a)(14) ... any other action ...
- 51.21 Environmental Asssessment: either FONSI or EIS
- Environmental Reports, 51.60, 51.45
- **Amendment** to existing fuel fabrication license would start with EA

70.22 Contents of Applications

- 70.21(f) Environmental Report 9 months prior to construction
- 70.22(a) Applicant identity, location, ownership (incl. foreign), activity, time (up to 40 years), material, qualifications, safety procedures and equipment, decommissioning funding.

71.22 Contents of Applications

70.22(b) Material control and accounting.
70.22(g) Physical protection of material in transit.
70.22(i) Emergency Plan.
70.22(k) Physical Security Plan.
70.24 Criticality Accident Requirements.

70.25 Financial Assurance

- 70.25(e) Cost estimate for decommissioning and financial assurance
- 70.25(f) Financial assurance methods
- 70.25(g) Decommissioning records

70.50 Reporting Requirements

- Immediate Report (4-hour)
- Twenty-four hour report
- 70.52 Accidental criticality (1-hour)
- Appendix A Reportable Safety Events
- 70.59 Effluent monitoring reports

70.55 Inspections

- Immediate unfettered access
- Records available for inspection
- Resident inspector office space

Part 70 Subpart H

- 70.61 Performance Requirements
- 70.62 Safety program and ISA
- 70.62(a) Safety program
- 70.62(b) Process safety information
- 70.62(c) Integrated safety analysis
- 70.62(d) Management measures

Part 70 Subpart H

- 70.64 Baseline design criteria
- 70.65 Application must include safety program decsription and ISA
- 70.72 Facility changes and change process

NUREG-1520

Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility

- http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1520/

NUREG-1520

1. General Information
2. Organization and Administration
3. Integrated Safety Analysis and ISA Summary
4. Radiation Protection
5. Nuclear Criticality Safety

NUREG-1520

- 6. Chemical Process Safety
- 7. Fire Safety
- 8. Emergency Management
- 9. Environmental Protection
- 10. Decommissioning
- 11. Management Measures

"Commitment to specific industry codes and standards increases the level of assurance of compliance with safety objectives, particularly where guidance is lacking in the Standard Review Plan and final design may not be complete."

(From LES lessons learned)

2.390 Public Disclosure

Application will be public unless it is:

- 2.390(a)(4) Trade secrets and commercial or financial information
- 2.390(b) Applicant must request witholding, marking, affidavit
- 2.390(c) Commission may grant or deny
- 2.390(d) physical protection, classified matter, material control and accounting

Review Process

- Acceptance Review
- FRN and Notice of Opportunity to Request Hearing
- Environmental Impact Statement

Review Process

- Technical Review
- ISA "Vertical Slice" Review
- Site Visit(s)
- RAI(s)
- Safety Evaluation Report
- License issued, Expiration Date

Operations

- Operational Readiness Review
- Periodic Inspections
- License Amendments
- ISA Annual Updates, 70.72(d)(2)
- Financial Assurance Update/3 years
- Licensee Performance Review/2 years

Early and frequent interface can result in earlier NRC staff understanding of applicant's approach and processes and earlier applicant understanding of NRC staff issues, and can improve overall efficiency.

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