

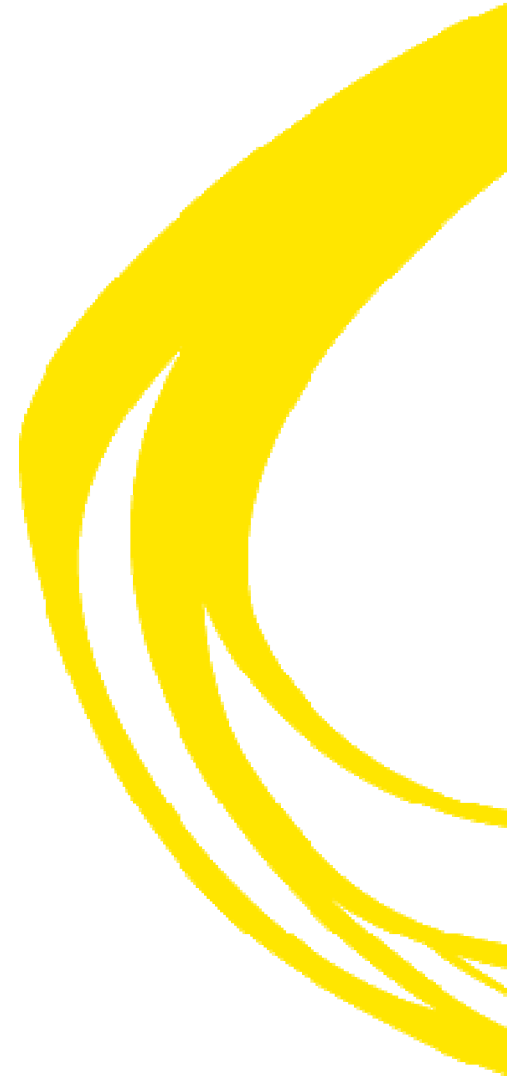


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Giving nuclear energy its full value

Graded Approach from an Industry Perspective

NRC REG CON



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Outline

Background

Progress To-Date

Current Status

Recap

Background

The Graded Approach Initiative (RIRP I-16-01)

- Too much detail in ISFSI licenses/CoCs
- Not commensurate with dry cask storage risk
- Need to remove extraneous information
- Need to improve licensing process efficiency
- Need to provide risk-appropriate criteria for content, based on
 - Expert judgement of required safety functions
 - Risk-insights from dry storage PRAs

Background

Will this really benefit the industry?

The whole industry?

Reducing the License/CoC level of detail?

What if an ISFSI:

- **Has many storage systems already loaded?**
- **Or is finished loading all fuel?**



Background

A Key Reality to Keep in Mind

For Part 50 and Part 72 site specific licensees
Only the current license / tech specs (TS) matter.

But for Part 72 CoC holders / general licensees (GLs)
All amendments remain in effect and matter.

So the graded approach results will not immediately apply and may never benefit the licensing bases of existing loaded GL systems.

Background

How Big is the Elephant?

- Latest CoC 1004 amendment (Amendment 14)
 - CoC – four pages
 - TS – 314 pages
- All amendments are independent and still in effect
- TN also holds five other Part 72 CoCs
- Total TN pages in CoC / TS is ~ 2,500 and growing



Background

Graded Approach RIRP three major phases

- Phase 1: Workshops to develop selection criteria (complete)
- Phase 2: Pilot application to exercise process (in progress)
- Phase 3: Develop regulatory guidance (pending pilot outcome)

Phase 1 – Developing the Selection Criteria

Workshop 1 – 2016 - August

Workshop 2 – 2016 - October

Workshop 3 – 2016 - November

Workshops Involved:

- **Much energy, much interaction, much interest**
 - **Risk considerations**
 - **Several actual Tech Specs examples presented**
- Mixed reactions!**

Further-demonstrated that agreement on the selection criteria and a pilot must occur

Phase 1 – Developing the Selection Criteria

Results

NEI letter (January 2017) to NRC (updated RIRP status)

Final workshop March 2017

May 2017 Letter from NEI to NRC - latest status

Key attachment to that letter (see next slide)

Phase 1 – Developing the Selection Criteria

Key attachment, “ISFSI License and Cask CoC Format, Content, and Selection Criteria”

(Became TN basis for the pilot decision criteria)

- Background
- CoC and Appendices Descriptions (i.e., selection criteria)
- Specific selection criteria for Approved Contents and LCOs/SRs
- Evaluation table (split table), including risk-insight questions

Phase 1 – Developing the Selection Criteria

New Format for the License / CoC and Appendices

Body - Certified Design

Section I, Technology

Section II, Design Features

Appendix A - Inspections, Tests, and Evaluations

Appendix B - Technical Specifications

Section 1, Definitions, Use and Application

Section 2, Approved Contents

Section 3, LCOs and SRs

Section 4, Administrative Controls

Phase 2 – The Pilot Application

Initial application involved assessment Forms (in lieu of the Split Table template)

- Each form accounted for a CoC condition or a TS requirement
- Some forms covered multiple items which have the same purpose (tables and figures generally)
- Some TS needed multiple forms (TS paragraphs often contain multiple requirements)
- Goal was to focus on individual items without distraction; resulted in 99 Forms

Phase 2 – The Pilot Application

Initial Pilot Application

June 2017 - CoC 1004 Amendment 16

- **Only the forms were sent (no CoC / ITE / TS / UFSAR)**
- **Based on the recommended movements, reduction in CoC / ITE / TS page-count would be ~ 50%**
- **NRC suggested public meetings to share feedback and plan the next steps, in lieu of RSIs/RAIs**

Phase 2 – The Pilot Application

Public Meetings Occurred – August and September 2017

Initial NRC feedback on the 99 forms:

TN said ‘stays’ – NRC agreed	66 items
TN said ‘goes’ – NRC agreed	19 items
TN said ‘stays’ – NRC said ‘goes’	1 item
TN said ‘goes’ – NRC said ‘stays’	13 items*

- * ASME Code alternatives should stay (36 pages, so 11%)
- * Several other items should stay (five pages total, so 1.5%)
- * Overall page reduction became ~37.5%

Items Agreed to be Moved from the CoC/TS (1 of 2)

- CoC 2 redundant to 10 CFR 72.244
- CoC 3c redundant to UFSAR
- CoC 3d redundant to UFSAR
- CoC 4 redundant to 10 CFR 72.232(d)
- CoC 5 provides no safety value
- CoC 6 redundant to 10 CFR 72 Subpart G
- TS 4.0 much general discussion - no impact on safety
- TS 4.1 (90%) neutron abs acceptance testing details
- TS 4.3.2 redundant to other TS for lifting height limit
- TS 4.4 (50%) redundant to TS figures for heat load limits
- TS 4.5 (50%) redundant to TS for weld leak testing

Items Agreed to be Moved from CoC/TS (2 of 2)

- TS 5.1 (50%) (operations procedure details)
(30%) redundant to 10 CFR 72 Subpart G
- TS 5.1.1 redundant to other TS or to regulations
- TS 5.1.2 80% redundant to other TS
- TS 5.2.1 redundant to 10 CFR 72.48
- TS 5.2.2 Training Program requirements, per Part 72
- TS 5.2.4 intro is redundant to 10 CFR Parts 20 and 72
- TS 5.3.2 an operational step if a cask is dropped
- TS 5.3.3 an operational step to align cask to overpack
- TS tables Fuel Assembly Design Characteristics Tables
- TS tables Control Component Decay Heat in Tables

Phase 2 – Latest Developments

Public Meeting No. 3 – February 2018

- Based on first-time word-processed CoC / ITE / TS
- NRC new feedback on 16 forms (mostly editorial)
- One notable item, regarding fuel qualifications tables (FQTs)

Originally planned for movement to the UFSAR, with certain parameters to remain in TS fuel spec tables
Now dispositioned as needing additional interaction

FQTs are 112 pages (35%) so only 2.5% overall reduction if FQTs remain (resolution of this item is key).

Phase 2 – Latest Developments

Progress since February meeting:

March, April – FQT clarification calls with NRC staff

May - Public meeting concerning treatment of FQTs

Result - TN to submit detailed fuel selection and qualification process.

June – Process, and examples, submitted.

July - Call with NRC

NRC having prolonged, detailed internal discussions

NRC developing an FQT position paper

Recap

NRC, NEI, industry agree – too much detail in license/CoC → RIRP item created.

Workshops in 2016 lead to risk-based selection criteria.

TN piloted the selection criteria with an amendment.

Agreement reached on 98 of 99 items (potential for a 37.5% page reduction).

One unresolved item remains, for FQTs, 35% of pages.

NRC developing an FQT position paper.

Industry guidance will then follow.

Acronyms

ASME	American Society of Mechanical Engineers
CoC	Certificate of Compliance
FQT	Fuel Qualification Table
ISFSI	Independent Spent Fuel Storage Installation
ITE	Inspections, Tests, and Evaluations
LCO	Limiting Condition for Operation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PRA	Probabilistic Risk Assessment
RIRP	Regulatory Issue Resolution Protocol
RAI	Request for Additional Information
RSI	Request for Supplemental Information
SR	Surveillance Requirement
TN	TN Americas LLC
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report



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