

# Using the Toolkit

A Reset and Refresher on  
Backfitting and Issue Resolution

# Today's Session Puts Backfitting in Context

- ▶ “Reset” and refresh thinking on backfitting and issue resolution
- ▶ 3 key objectives:
  - ▶ Primer on backfitting in the context of licensing basis and issue resolution
  - ▶ Refresher on promptly raising and resolving safety/security issues
  - ▶ Preview of NRC's planned activities on backfitting

# Primer on Backfitting

# Backfitting Relates to New or Changed Requirements or Interpretations

- ▶ Backfitting is a *Code of Federal Regulations* requirement for the NRC
  - ▶ Structured approach for imposing a new requirement
  - ▶ Assumes it is an entity with such protections
- ▶ Backfits can occur after a regulatory approval if there are:
  - ▶ Changed or new requirements (regulation, technical specification, license condition, order)
  - ▶ Changed or new position **imposed** by the staff (including implied or inferred imposition)
- ▶ Backfits affect:
  - ▶ systems, structures, or components (design or the actual equipment)
  - ▶ organization or procedures for design, construction, or operation

# Only Certain Entities Are Protected

- ▶ Power reactors (10 CFR 50.109)
- ▶ New power reactors (various similar provisions in 10 CFR Part 52, termed **issue finality** instead of **backfitting**)
- ▶ Fuel cycle facilities (10 CFR 70.76)
- ▶ ISFSIs (10 CFR 72.62)
- ▶ Gaseous diffusion plants (10 CFR 76.76) [none currently regulated]

# 10 CFR 50.109 Is the Most Familiar Example of the “Backfit Rule”

- ▶ (a)(1): definition of backfitting - applicability and scope
- ▶ (a)(2): requirement for a systematic and documented analysis, except where an exception applies
- ▶ (a)(3): requirement for substantial increase in overall protection of the public health and safety or the common defense and security, and that implementation costs are justified, except where an exception applies
- ▶ (a)(4): three exceptions to (a)(2) and (a)(3) related to compliance and adequate protection (to be discussed later), with documented evaluation needed
- ▶ (a)(5): always require backfitting if it is necessary for adequate protection
- ▶ (a)(6): details of documented evaluation under (a)(4)
- ▶ (a)(7): choice among ways to achieve compliance (including consideration of cost)
- ▶ (b): timing
- ▶ (c): considerations to be made in determining (a)(3)
- ▶ (d): no licensing action will be withheld during backfit analysis
- ▶ (e): responsibility of the Executive Director for Operations

# NRC Must Take Action on Matters of Adequate Protection or Common Defense and Security

- ▶ If backfitting is necessary to ensure adequate protection, then it is required by the Atomic Energy Act.
- ▶ No explanation or cost justification is required.
- ▶ 10 CFR 50.109(a)(5): *The Commission shall always require the backfitting of a facility if it determines that such regulatory action is necessary to ensure that the facility provides adequate protection to the health and safety of the public and is in accord with the common defense and security.*

# Two Categories of Backfits Are Excepted from the Need for a Backfit Analysis

- ▶ Adequate protection
  - ▶ Necessary to ensure that the facility provides adequate protection to the public health and safety and is in accord with the common defense and security
  - ▶ May involve redefining what level of protection to the public health and safety or common defense and security should be regarded as adequate
  - ▶ **Example:** orders on mitigation of beyond-design-basis events after the Fukushima Dai-ichi accident
- ▶ Compliance
  - ▶ Necessary to bring a facility into compliance with a license, rules, or orders, or into conformance with written commitments by the licensee
  - ▶ Involves facts that were mistaken or omitted when the activity was authorized, so something needs to change
  - ▶ **Not** pure enforcement (where requirement is clear) and **not** new or revised interpretations of what was needed to comply with NRC requirements at the time of approval



# For All Other Backfits, a Backfit Analysis Supports the Action

- ▶ Unless an exception exists (previous slide), a backfit analysis must be performed and documented to show:
  - ▶ First, that a substantial increase in overall protection of the public health and safety or the common defense and security.
  - ▶ Then, that direct and indirect costs of implementation are justified in view of the increased protection.
- ▶ **Note:** “Substantial” is sometimes discussed in terms of the safety goals, but Commission clarified “substantial” means “important or significant in a large amount, extent, or degree.”
  - ▶ Not imposing insignificant but inexpensive safety improvements
  - ▶ Not disapproving worthwhile safety improvements with justified costs

# What's New in Backfitting

# Compliance Exception Has Always Been Applicable in Narrow Circumstances

- ▶ 1985 Statement of Considerations for the Backfit Rule stated:
  - ▶ Exception limited to omission or mistake of fact
  - ▶ New or revised interpretations of what was needed to comply with existing NRC requirements did not fall within the exception

# 2015 Compliance Exception Use for Byron/Braidwood Was Overturned

- ▶ In imposing backfit, staff asserted that the NRC erred in previous approvals, by basing approval in part on the ability of valves to pass water and reclose
- ▶ Upheld on appeal to NRR Director, but overturned on appeal to EDO
  - ▶ The EDO found that NRC staff exercised reasonable and well-informed engineering judgement in previous approvals - not a mistake of fact
  - ▶ The EDO found that staff had not relied upon a known and established position to support its use of the compliance backfit
  - ▶ Potential for backfit on other bases (e.g., adequate protection, cost-justified substantial safety enhancement) was not decided in the appeals

# Commission Provided New Guidance on Compliance Exception (SRM-COMSECY-16-0020)

- ▶ Limited situations involving omission or mistake of fact with both of:
  1. NRC staff incorrectly perceived facts, performed or failed to recognize flawed analyses, or failed to properly draw direct inferences from those facts or analyses
    - ▶ due to NRC, licensee, or third-party error or omission
    - ▶ at or before the time of its determination that a known and established standard of the Commission was satisfied
    - ▶ as judged by standards and practices that were prevailing among professionals or experts in the relevant area at the time
  2. Those facts, analyses, or inferences have now been properly perceived, performed, or drawn.

# Compliance Exception May Not Be Used for New Positions

- ▶ Cannot use the compliance exception based on:
  - ▶ Approaches that were not the prevailing way at the time of the original NRC determination
  - ▶ New approaches developed or accepted after the original NRC determination
- ▶ Think: If we knew this (the corrected error or omitted information) then, would we have made a different decision?

# Commission Also Addressed Design Criteria and Cost Consideration

- ▶ General Design Criteria (GDCs) should only be used as the basis for compliance backfitting in certain cases
  - ▶ For operating plants, NRC already found that the design basis of the plant (as reflected in the principal design criteria) meets or exceeds the minimum criteria in the GDCs
  - ▶ Approval process typically yields more specific requirements (e.g., technical specifications)
  - ▶ Can rely on GDCs if it provides more than just a performance standard and has not been superseded by other requirements
  - ▶ Conditions outside the GDCs should first be considered as matters of adequate protection
- ▶ Compliance backfitting must involve some cost consideration
  - ▶ Follows on *Michigan v. EPA* Supreme Court decision
  - ▶ Guidance for staff on cost considerations is being prepared

# New Direction Results in Updated Approach to Backfitting

- ▶ First, determine if the proposed action is needed for **adequate protection**. If so, develop the documented evaluation.
- ▶ If the proposed action is not needed for adequate protection, then determine if the **compliance exception** applies. If so, develop the documented evaluation (including cost consideration).
- ▶ If neither of the exceptions apply to the proposed action, then perform a **backfit analysis** to determine if costs are justified by the safety/security benefit.
- ▶ Guidance is being updated for Commission approval (due April 2018).



# Raising and Resolving Safety/Security Issues

# You Are Essential to the NRC's Safety/Security Mission

- ▶ Raise and support the resolution of issues through appropriate processes, including urgent action for immediate safety issues
- ▶ Understand the applicable history and licensing basis before taking action
- ▶ Do not imply to licensees that a particular approach should be taken (except where there is a clear requirement)
- ▶ Follow backfit process (including updated guidance when ready) if new requirements or staff positions need to be imposed
- ▶ Work with management, Project Manager, and other staff (including backfit POCs) to answer questions and resolve issues

# See Something - Say Something: There *Is* a Process for Your Concern

- ▶ In an inspection
  - ▶ Talk to your team, supervisor, etc.
  - ▶ Ask the licensee “why” (in a neutral, relevant way)
  - ▶ Kick off another process if needed, particularly for generic concerns
- ▶ In a licensing review
  - ▶ Talk to your Project Manager, review team, supervisor, etc.
  - ▶ Ask for or audit additional information (if it is necessary for the finding)
  - ▶ Kick off another process (if it’s concerning but unrelated)
- ▶ In general
  - ▶ Address urgent safety concerns immediately (engage management)
  - ▶ Seek to understand why something is the way it is, then consider whether that’s right
  - ▶ Licensee may address on their own without NRC action
  - ▶ (Note: Additional processes exist if you disagree with an ongoing/final agency decision)

# NRC Response Depends on Current Requirements

- ▶ Understand requirements vs. staff position
  - ▶ NRC should not imply that a particular approach to meet a general requirement is essential
  - ▶ Simpler cases when licensees have committed to an approach (e.g., specific Regulatory Guide)
  - ▶ Change in (perception of) what is acceptable to meet a requirement can result in backfit discussions
- ▶ Understand licensing basis
  - ▶ May take research (microfiche is your friend!)
  - ▶ NRC/licensee may disagree on interpretation—may need to consider context, other licensees, etc.
  - ▶ Change in (perception of) NRC position can result in backfit discussions

# Enforcement Process Only Applies when Legally Binding Requirements Are Not Met

- ▶ Typical inspection/violation space
  - ▶ Identify legally-binding requirement (clearly in licensing basis)
  - ▶ Contrary to... (describe how the licensee failed to meet it)
- ▶ Enforcement that relies on a different interpretation of the requirements than is clear in the licensing basis, or enforcement that does not account for previous plant-specific approvals such as exemptions or amendments, will likely result in backfit discussions
- ▶ Need to interpret requirements in appropriate context, including what was known at the time of approval

# Backfitting Claims Can Arise from Casual Discussions

- ▶ Staff are expected to raise issues and ask questions
- ▶ Licensees may hear these as backfits:
  - ▶ Suggestion of how a task “should” be done
  - ▶ Questions about the design capability of a system (especially older systems)
  - ▶ Comparisons of one facility to another (with a different licensing basis)
- ▶ Clear understanding of licensing basis may resolve licensee concern
- ▶ Call the project manager and/or office/region backfitting point of contact (last slide) if there are questions
- ▶ Use the backfitting process—one tool in our toolbox—when needed
  - ▶ Working with other technical staff and attorneys
  - ▶ Assess basis and prepare justification

# Summary

# What Were the Pre-Test Answers?

1. The Backfit Rule is a requirement applied to NRC activities. **TRUE**
2. All NRC licensees have “protection” under the Backfit Rule. **FALSE**
3. The Backfit Rule was created in response to the Three Mile Island accident. **FALSE**
4. The NRC cannot consider costs for adequate protection backfitting or compliance backfitting. **FALSE**
5. If the NRC can justify a backfitting situation as either adequate protection backfitting or compliance backfitting, then we can use either justification. **FALSE**
6. A compliance backfit can be used when the NRC determines that a licensee’s method of compliance, approved by the NRC ten years ago, is no longer an acceptable method of compliance. **FALSE**
7. The NRC can impose a new or changed requirement as long as the benefits that would result outweigh the costs to the licensee. **FALSE**



# Agency-Level Backfit Guidance Updates Are Due to Commission in April 2018

- ▶ Management Directive 8.4, “Management of Facility-Specific Backfitting and Information Collection” (ML12059A460)
  - ▶ Roles and responsibilities, overview of requirements, process flowcharts
  - ▶ Being revised to reflect Commission direction, lessons learned, generic backfits
- ▶ NUREG-1409, “Backfitting Guidelines” (ML032230247)
  - ▶ Types of backfits, staff processes, questions and answers, examples
  - ▶ Being revised to reflect Commission direction, lessons learned
- ▶ NUREG/BR-0058, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission” (ML042820192)
  - ▶ Being revised to include cost-benefit considerations for backfitting, including cost consideration for compliance backfits

# More Training and Resources Are on the Way

- ▶ Backfitting Community of Practice (group of office/region experts)
- ▶ New “just-in-time” training and knowledge management resources on the internal Web (by January)
- ▶ Better means of retrieving key docketed information (beginning in January)
- ▶ Office/region implementing guidance (after agency guidance is finalized)
- ▶ More detailed training on licensing/design basis and backfitting (2018)

# Points of Contact Have Been Designated

## CRGR - Chair Ed Hackett (RES) [support: Les Cupidon, Nick DiFrancesco]

- ▶ **NMSS:** Scott Moore
- ▶ **NRO:** John Monninger
- ▶ **NRR:** Ray Lorson
- ▶ **NSIR:** John Lubinski
- ▶ **Region III:** Darrell Roberts
- ▶ **OGC:** Cathy Scott

## Office/Region Points of Contact:

- ▶ **NMSS:** James Downs
- ▶ **NRO:** George Tartal, Bill Reckley
- ▶ **NRR:** Timothy Reed
- ▶ **NSIR:** Doug Huyck
- ▶ **OCHCO:** Steve Cochrum
- ▶ **OE:** Robert Fretz
- ▶ **OGC:** Howard Benowitz, Adam Gendelman
- ▶ **Region I:** Tony Dimitriadis
- ▶ **Region II:** Shakur Walker
- ▶ **Region III:** Nestor Feliz-Adorno, Julio Lara
- ▶ **Region IV:** Thomas Farnholtz

*CRGR Working Group Co-Chairs Theresa Clark (NMSS)  
and Sheldon Stuchell (NRR)*

Questions?

Backup

# Training Results from EDO-Directed Backfitting Assessment

- ▶ June and December 2016 taskings from EDO
  - ▶ Assess agency backfitting guidance, training, and knowledge management
  - ▶ Incorporate recent backfitting decisions
- ▶ June 2017 report from Committee to Review Generic Requirements (CRGR)
  - ▶ Opportunities exist to improve backfitting practices
  - ▶ Broad communication of Commission direction, increased management involvement, and improved training will yield greatest improvements
  - ▶ 3 near-term actions
    - ✓ Make report public
    - ✓ Issue interim guidance (Yellow Announcement 17-007 8/16/17)
    - ✓ Require “reset” training

# EDO Directed Multiple Actions in Response to CRGR Report

- ▶ July 19, 2017 memo supported near-term and longer-term actions, including:
  - ▶ “Reset training” for all staff and managers with backfitting responsibilities by January 31, 2018 (today’s session)
  - ▶ Updated agency-wide and office/region-level guidance
  - ▶ Qualification and refresher training
  - ▶ Knowledge management resources
  - ▶ CRGR charter changes to include consultation on facility-specific backfits, role in appeals, and public meetings
- ▶ Added two actions:
  - ▶ Report on current availability of key docketed information categories, as well as the resource implications of making such information more readily available
  - ▶ Report on resources needed to complete actions on an expeditious schedule, as well as whether these resources are already budgeted
- ▶ Actions have been tasked and are being worked over the next year.