



# **BACKFIT RULE AND CRGR'S ROLE**

**DAVE LOCHBAUM**  
**DIRECTOR, NUCLEAR SAFETY PROJECT**

**SEPTEMBER 13, 2016**

## **§ 50.109 Paragraph (a)(1)**

**“Backfitting is defined as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission's regulations or the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position.”**

## **§ 50.109 Paragraph (a)(3)**

**“Except as provided in paragraph (a)(4) of this section, the Commission shall require the backfitting of a facility only when it determines, based on the analysis described in paragraph (c) of this section, that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit and that the direct and indirect costs of implementation for that facility are justified in view of this increased protection.”**

## **§ 50.109 Paragraph (a)(4)**

**“The provisions of paragraphs (a)(2) and (a)(3) of this section are inapplicable and, therefore, backfit analysis is not required and the standards in paragraph (a)(3) of this section do not apply where the Commission or staff, as appropriate, finds and declares, with appropriated documented evaluation for its finding, either:**

**(i) That a modification is necessary to bring a facility into compliance with a license or the rules or orders of the Commission, or into conformance with written commitments by the licensee; or**

**(ii) That 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; or**

**(iii) That the regulatory action involves defining or redefining what level of protection to the public health and safety or common defense and security should be regarded as adequate.”**

## **Point 1**

**The backfit regulation prevents the NRC from imposing a new or revised requirement on plant owners unless it is necessary to provide adequate protection or the benefit to be realized by the requirement justifies its cost.**

**So, the open and public rulemaking process that adds or revises federal regulations can only impose new requirements that are necessary for adequate protection or formally justified.**

# § 50.109 Guidance & Implementation

**[NUREG-1409](#), Backfitting Guidelines**

**[NUREG/BR-0058](#), Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission**

**[Management Directive 8.4](#), Management of Facility-Specific Backfitting and Information Collection**

**[LIC-202 Rev. 2](#), Procedures for Managing Plant Specific Backfits and 50.54(f) Information Requests**

**[LIC-400](#), Procedures for Controlling the Development of New and Revised Generic Requirements for Power Reactor Licensees**

**[Committee to Review Generic Requirements](#)**

**[ML021270338](#), Plant-Specific Backfit Audit Report**

## **Point 2**

**The backfit regulation is backed by voluminous guidance and implementing documents to help NRC avoid imposing requirements that are not needed for adequate protection and lack justifiable cost.**

## **Point 3**

**The backfit regulation and accompanying guidance and implementing documents are intended to protect plant owners from the NRC imposing unnecessary and unjustified requirements.**

## **Point 4**

**Requirements imposed by the NRC after navigating the backfit regulation's many wickets are intended to protect public health and safety.**

## **Points 5 and 6**

**When unnecessary and unjustified requirements are imposed, plant owners have been inadequately protected and unfairly burdened.**

**When necessary and justified requirements are imposed but not met, the public has been inadequately protected and unfairly burdened.**

# **Backfit vs. Backoff**

**What regulation and associated guidance and implementation documents apply when the NRC staff decides to allow a reactor shut down for 22 years to restart despite known violations of fire protection regulations, permits three reactors to continue operating for years despite known violations of fire protection regulations, or deems longer than a decade sufficient time to eventually achieve compliance with necessary and justified requirements?**

# **The Backoff Hole**

**THIS SLIDE UNFORTUNATELY BLANK**

# Safety Last at Browns Ferry

**March 19, 1985: TVA shut down Unit 1**



**June 2, 2007: Unit 1 reconnected to the grid**

**May 1, 2007: NRC accepted non-compliances**

1. TVA, in its letter of April 24, 2006 (Reference 7), committed to identify the Appendix R, Paragraph III.G.2, noncompliances involving operator manual actions, to place them into TVA's corrective action program, and to implement compensatory measures. Therefore, TVA should complete the commitments made in its April 24, 2006, letter, as well as any other restart related commitments made previously to the NRC regarding post-fire operator manual

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May 1, 2007

E1-48

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actions. [STATUS: TVA notified the NRC of completion of these commitments in a letter dated April 24, 2007 (Reference 8).]

# **Browns Ferry Point**

**TVA was unable (or unwilling) to find the time during the 22-year outage to bring Unit 1 into compliance with either the fire protection regulations adopted by the NRC in 1980 as a result of the Browns Ferry fire or the alternative fire protection regulations adopted by the NRC in July 2004.**

**NRC approved restart of Unit 1 knowing that it did not comply with requirements imposed because they were needed for adequate protection of public health.**

**Where's the regulatory analysis? Where's the CRGR evaluation of backing off from this generic requirement? What protects the public from the NRC not enforcing a requirement necessary for adequate protection?**

# Duke Requests NRC's Approval for Fire Protection Fixes at Oconee



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May 30, 2008

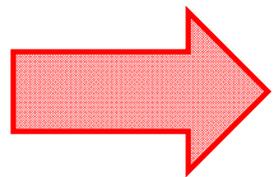
U.S. Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, D.C. 20555

Subject: Duke Energy Carolinas, LLC  
Oconee Nuclear Site Units 1, 2, and 3  
Docket Numbers 50-269, 50-270 and 50-287  
License Amendment Request to Adopt NFPA 805 Performance-Based  
Standard for Fire Protection for Light Water Reactor Generating Plants  
(2001 Edition).  
License Amendment Request (LAR) No. 2008-01

Source: <http://pbadupws.nrc.gov/docs/ML0816/ML081650475.pdf>

## **§ 50.109 Paragraph (a)(4)**

**“The provisions of paragraphs (a)(2) and (a)(3) of this section are inapplicable and, therefore, backfit analysis is not required and the standards in paragraph (a)(3) of this section do not apply where the Commission or staff, as appropriate, finds and declares, with appropriated documented evaluation for its finding, either:**



**(i) That a modification is necessary to bring a facility into compliance with a license or the rules or orders of the Commission, or into conformance with written commitments by the licensee; or**

**(ii) That 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; or**

**(iii) That the regulatory action involves defining or redefining what level of protection to the public health and safety or common defense and security should be regarded as adequate.”**

# NRC Amends Operating Licenses for Fire Protection Requirements



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

December 29, 2010

Mr. T. Preston Gillespie  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, ISSUANCE OF AMENDMENTS REGARDING TRANSITION TO A RISK-INFORMED, PERFORMANCE-BASED FIRE PROTECTION PROGRAM IN ACCORDANCE WITH 10 CFR 50.48(c) (TAC NOS. ME3844, ME3845, AND ME3846)

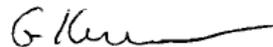
Source: <http://pbadupws.nrc.gov/docs/ML1036/ML103630612.pdf>

# NRC Gives Duke Two Years to Implement the Approved Changes

## Transition License Conditions

- 1) The licensee shall complete the items described in Section 2.9, Table 2.9-1, "Implementation Items," in the NRC SE dated December 29, 2010, prior to January 1, 2013. Implementation items that result in a risk increase, as part of a plant change evaluation, can be self-approved by the licensee, as long as the overall transition risk remains a decrease (i.e., collective risk increases of transition and implementation are offset by the PSW modification risk decrease.)
- 2) To complete the transition to full compliance with 10 CFR 50.48(c), the licensee shall implement the modifications listed in Section 2.8, Table 2.8.1-1, "Committed Plant Modifications," in the NRC SE dated December 29, 2010.
- 3) The licensee shall maintain appropriate compensatory measures in place until completion of all modifications and implementation items delineated above.
4. This license amendment is effective as of its date of issuance and shall be fully implemented prior to January 1, 2013.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

**More than 4½  
years after  
Duke requested  
the changes**

# Duke Asks NRC to Extend Deadline Until December 31, 2014



*T. PRESTON GILLESPIE, JR.*  
*Vice President*  
*Oconee Nuclear Station*

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*Seneca, SC 29672*

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July 31, 2012

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Subject: Duke Energy Carolinas, LLC  
Oconee Nuclear Site Units 1, 2, and 3  
Docket Numbers 50-269, 50-270 and 50-287  
NFPA 805 Performance-Based Standard for Fire Protection for Light  
Water Reactor Generating Plants (2001 Edition)  
LAR 2012-09, License Amendment Request for Revision to License  
Condition 3.D, Transition License Conditions #1 and #2

Source: <http://pbadupws.nrc.gov/docs/ML1226/ML12262A372.pdf>

# NRC Denies 2-Year Extension

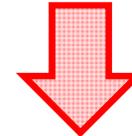
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

January 15, 2013

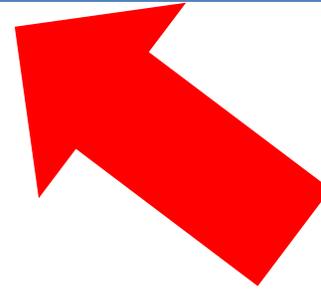
Mr. Preston Gillespie  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752



SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, DENIAL OF AMENDMENT  
REQUEST REGARDING EXTENSION OF LICENSE CONDITION FOR  
NFPA 805 TRANSITION (TAC NOS. ME9184, ME9185, AND ME9186)

# NRC's Reasons for the Denial

The proposed changes requested to extend the due dates for certain plant modifications required by a previous license amendment which approved the transition to NFPA 805 for Oconee 1, 2, and 3. As described below, the increase in core damage frequency (CDF) resulting from the change requested in the July 2012 application is about four times the greatest acceptable increase in CDF for a facility with a very low total risk, and 40 times the greatest acceptable CDF increase for a high total risk plant. This significant increase in CDF warrants denial of the application based on the guidance of RG 1.174.



**The requested 2-year extension is at least four times the allowable core damage frequency, or risk of core meltdown, increase.**

# Follow-up to NRC's Denial



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 1, 2013

EA-13-010

Mr. Scott Batson  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752

**NOT April 1<sup>st</sup>, which  
would make lots more  
sense of this NRC antic**

SUBJECT: NOTICE OF VIOLATION AND CONFIRMATORY ORDER RELATED TO A FIRE PROTECTION PROGRAM LICENSE CONDITION (OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3)

# And NRC Ordered Fixes by...

- 
6. The licensee shall complete all items in Table 2.9-1, "Implementation Items," of the December 29, 2010, Oconee NFPA 805 safety evaluation report no later than **November 15, 2016.**
- 

**After turning down a 2-year extension request as being too risky, the NRC ordered that the fixes be completed within 4 years.**

# Oconee Point

**With regulatory analysis, due process, and all other backfit regulation niceties satisfied, the NRC imposed the NFPA 805 fire protection requirements.**

**Via a public license amendment process, NRC approved Oconee's transition to NFPA 805 within a specified timeline.**

**With no regulatory analysis-like evaluation and without any public process, the NRC permitted the three reactors to continue operating for years in non-compliance with requirements deemed necessary for adequate protection. What protects the public from the NRC not enforcing requirements necessary for adequate protection?**

# **Other Backoff Examples**

- **Schedular exemptions from Fukushima Orders**
- **Reactors slowly working towards resolution of GSI-191 – a generic safety issue determined by NRC to have “high priority” last century (Sept. 1996).**
- **Oconee still working towards resolution of tornado protection problems identified even earlier in the 20<sup>th</sup> century.**
- **Reactors (except Seabrook) operating despite not complying with GDC 17 requirements (e.g., the open open phase condition condition.)**

# **Backfit vs. Backoff Point**

**The backfit regulation et al protects plant owners from the NRC imposing unjustified requirements.**

**Nothing comparable protects the public from the NRC backing off justified requirements.**

**If it takes X, Y, and Z to protect owners from the NRC imposing requirements unnecessarily, then it also takes X, Y, and Z to protect the public from the NRC relaxing requirements unnecessarily.**

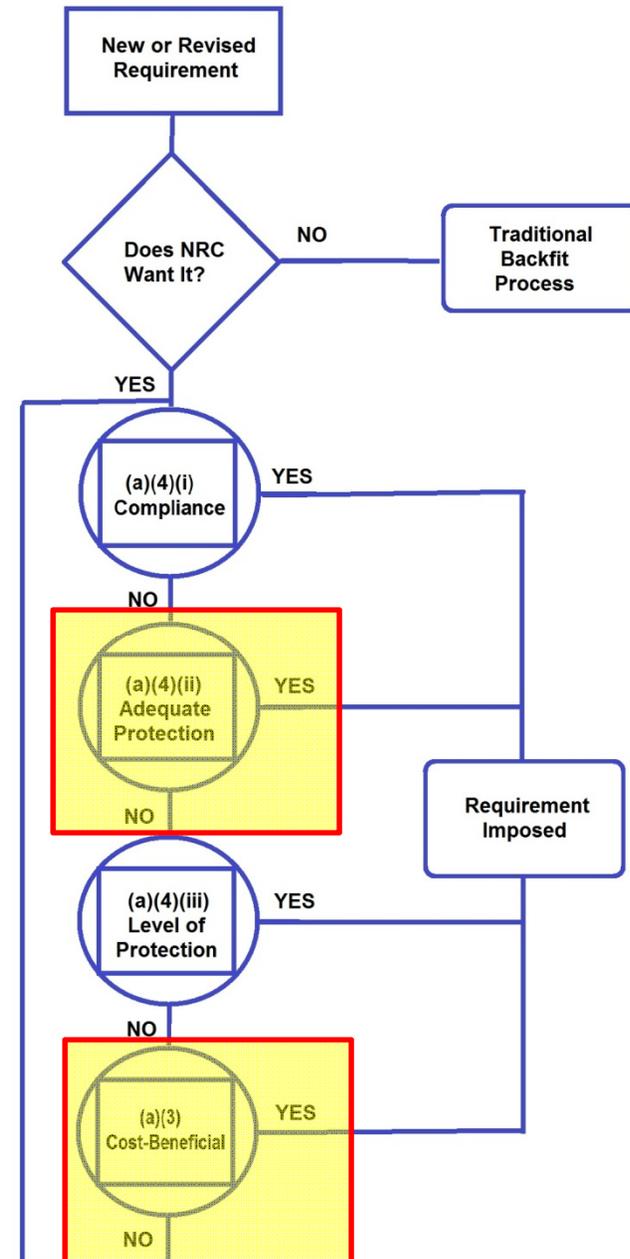
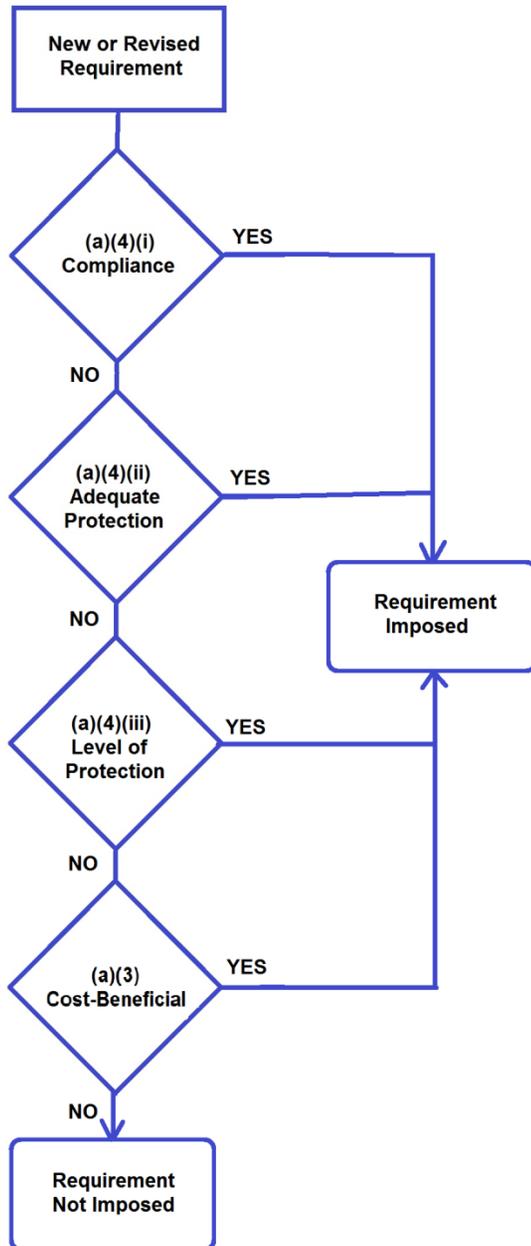
# **Backoff Point Context**

**UCS does not contend that formal measures for backoffs comparable to those for backfits would prevent the NRC from allowing reactors to continue operating while known safety problems were resolved or from extending a deadline for their resolution.**

**The backfit measures do not prevent new and revised requirements from being imposed. They protect owners from unnecessary and unjustified backfits.**

**The public deserves comparable protection against unnecessary and unjustified backoffs.**

# Square Peg/Round Hole Backfits



# **Square Peg/Round Hole Backfits**

**“Adequate protection” and both the costs and benefits in cost-benefit analyses are so vaguely defined, uncertain, and subjective that it is way, way, way, way, way too easy to tweak inputs to achieve any desired outcome.**

**The process permits the NRC staff to impose or reject candidate requirements as it wants.**

**The process is objective: both industry and UCS object to it.**

# Square Peg/Round Hole Backfits

👉 **Wanted by NRC and Imposed: Spent fuel pool level instrumentation**

***NRC's Spent Fuel Pool Consequences Study concluded little risk after irradiated fuel has been in pool for 60 days. If true, why didn't the NRC Order calendars instead of level instruments?***

👉 **Unwanted by NRC and Not Imposed: Expedited transfer of irradiated fuel from unsafe, unsecure spent fuel pools into safer and securer dry storage**

👉 **(Wanted then) Unwanted by NRC and Not Imposed: Filters for containment venting of highly radioactive gases during beyond design basis accidents**