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General Comment

See attached file(s)

I, Samuel Miranda, hold Bachelor's and Master's degrees in nuclear engineering from Columbia University, and a Professional Engineer's license in mechanical engineering, in the Commonwealth of Pennsylvania.

I have more than 40 years of experience in reactor safety analysis and licensing at Westinghouse and the NRC.

At Westinghouse (25 years), I worked in their Nuclear Safety Department, where I directed and performed nuclear safety analyses of Westinghouse plants, CE-designed plants, and Soviet VVER plants to resolve reactor safety questions, to improve nuclear power plant operability, and to support the licensing of nuclear plant modifications, core reloads, and changes in operating procedures. I also developed standards and methods for use in nuclear safety analysis, and automatic reactor protection systems design. My work in reactor protection systems design included the preparation of functional requirements, component sizing, and determination of setpoints, time response limits, and Technical Specification revisions. In the 1980s, I managed a program, for more than 30 utilities in the Westinghouse Owners Group, to develop a system to improve power plant availability and safety by reducing the frequency of unnecessary automatic reactor trips (see patent no. 4,832,898).

At the NRC, I worked in NRR's Division of Safety Systems (DSS), where I reviewed license amendment

requests (LARs) for license renewals, power upratings, and modifications of protection systems in PWR and BWR reactor systems. This included presenting and defending review results before the Advisory Committee on Reactor Safeguards (ACRS). I also revised several sections of the Standard Review Plan (NUREG-0800), and presented the revised versions to the ACRS.

I wrote RIS 2005-029, which addressed the compliance issue that led to the NRC's backfit of 2015 (which I also wrote). I authored several peer-reviewed papers, published and presented at ASME conferences, which related to several issues in NUREG-1409.

I retired from the NRC in mid-2014, at grade GG-15.

Attachments

NUREG-1409R1-comments

Docket No. NRC-2018-0142 (85 FR 16278)

I hereby submit my comments, and questions pertaining to NUREG-1409, draft Revision 1, "Backfitting Guidelines" (ADAMS Accession No. ML18109A498), for consideration by the U.S. Nuclear Regulatory Commission (NRC) staff.

According to the Federal Register announcement, public comments are due to the NRC by May 22nd. The NRC staff held a Category 3 public meeting, via teleconference, on April 28th. [1] The NRC staff has not undertaken notice-and-comment rulemaking, as required under 5 USC 551, to establish a rule that would codify forward fitting. So, I appreciate this opportunity to submit my comments, and questions regarding forward fitting and other issues introduced by this revision of NUREG-1409 (and its basis in MD 8.4).

I'm surprised to see that the NUREG-1409 guidance does not take advantage of the NRC staff's experience with its 2015 backfit order [2], which was appealed, twice, by the licensee. [3] [4] The backfit order, which took two years to write, began an 11-month period of appeals and evaluations which ended with the EDO's granting of the licensee's second appeal. However, the EDO's decision [5] was not dispositive. A year later, the NRC staff revisited the evaluations, and especially the underlying test data, and found that it had "no confidence" in the premise upon which the EDO relied to make his decision. [6] So, this is a two-year period that is rife with errors, some corrected, and some not. Yet, none of the encompassed events are mentioned in the NUREG-1409 guidance. If "One fails forward toward success," then it would be necessary to recognize failures, and learn from them, in order to progress toward success. The NRC staff cannot achieve success by following this NUREG-1409 guidance because this guidance doesn't identify any failures. Expect my comments to cite a number examples, drawn from this backfit experience, which holds a large trove of lessons unlearned.

I understand that my comments and questions will be entered into the public record via the NRC website, and into publicly accessible section of the Agencywide Documents Access and Management System (ADAMS). The name of every person that appears herein was drawn from the cited, publicly available references.

My comments and questions follow:

(1) Overview of Backfitting and Forward Fitting

(1.01) It's reasonable to expect that a document that is intended to help the NRC staff prepare backfit orders, and evaluate consequent appeals, would begin with a history of backfitting, and offer some background information that would help the NRC staff avoid issuing any unnecessary backfitting or forward fitting orders. That is, the NRC staff should have the knowledge and resources to correct design and compliance problems without resorting to backfitting or forward fitting.

This need not transform the regulator into a designer. For example, more than a decade before the backfit order of 2015 [2], five plants demonstrated compliance with the requirements related to event classification, event escalation, and specified in 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 by upgrading their PORVs. (No PSVs were involved, and no backfitting was required.)

The operators of five plants had already demonstrated compliance with the relevant requirements by upgrading their PORVs to safety grade quality, and qualifying them for water relief duty. They are:

Salem Units 1 and 2 [7]	6/4/1997
Millstone, Unit 3 [8]	6/5/1998
Diablo Canyon 1 & 2 [9]	7/2/2004

In retrospect, the PORV upgrades were faster, and cheaper than Exelon's backfit appeals, and the results were technically sound. PORV upgrades can be justified. However, the use of PSVs, in this application, cannot. The details of PORV upgrades, and the issues that plague PSV qualification were published in 2018. [10]

(1.02 "This guidance is intended for use by the NRC staff, is not legally binding, and does not contain or imply requirements for any licensee …" {pg 1-1, ln 7} This guidance addresses licensees' appeals of forward fitting actions; but there is no regulation regarding forward fitting requirements. {pg 1-1, ln 34}

"Legally binding regulatory requirements are stated only in laws; NRC regulations; licenses, including technical specifications; or orders, not in NUREG-series publications." {NUREG preface}

The NRC does not have the authority to impose forward fitting requirements, based upon this guidance. The NRC can continue to conditionally approve LARs. However, licensees cannot appeal any conditions that are attached to the NRC staff's LAR approvals by labeling them, "forward fits", and then applying the forward fitting appeals guidance contained in NUREG-1409. Miranda-1

EO 13892 [11] elaborates:

An agency, "may not treat noncompliance with a standard of conduct announced solely in a guidance document as itself a violation of applicable statutes or regulations."

"When an agency uses a guidance document to state the legal applicability of a statute or regulation, that document can do no more, with respect to prohibition of conduct, than articulate the agency's understanding of how a statute or regulation applies to particular circumstances."

"Agencies shall act transparently and fairly with respect to all affected parties, as outlined in this order, when engaged in civil administrative enforcement or adjudication. No person should be subjected to a civil administrative enforcement action or adjudication absent prior public notice of both the enforcing agency's jurisdiction over particular conduct and the legal standards applicable to that conduct." Miranda-2

In this case, the NRC has no jurisdiction over "forward fitting" or "forward fitting" appeals.

(1.03) This NUREG-1409 guidance notably omits any reference to Exelon's backfit appeals of 2015, and 2016, and how they were reviewed by the NRC staff (NRR), and the EDO. The omission is significant because some of the guidance that is offered in NUREG-1409 can be traced directly to events of those appeals. NRR's backfit and Exelon's backfit appeals are chronicled below: Miranda-3

NRR reviewer finds errors in prior Exelon LARs and NRR reviews [12]	Fri	2/28/2014
NRR issues a backfit order to Exelon re Byron and Braidwood [2]	Fri	10/9/2015

Mr. Reed will

Exelon files 1st level appeal [3]	Tue	12/8/2015
NEI writes to NRR Director in support of appeal [13]	Wed	1/20/2016
NRR convenes a public meeting to hear appeal [14]	Mon	3/7/2016
NRR denies Exelon's 1st level appeal [15]	Tue	5/3/2016
Exelon files 2nd level appeal (to the EDO) [4]	Thu	6/2/2016
NEI writes to EDO re GDCs and NUREG-1409 revision [16]	Tue	6/6/2017
EDO tasks the CRGR to review NRC's backfitting practice [17]	Thu	6/9/2016
EDO appoints and charters a backfit appeal review panel (BARP) [18]	Wed	6/22/2016
EDO and BARP chairman call Exelon's general counsel [19]	Thu	6/30/2016
BARP issues its results (without a public meeting) [20]	Tue	8/23/2016
1st CRGR public meeting [21]	Tue	9/13/2016
EDO grants Exelon's 2nd level appeal [5]	Thu	9/15/2016
Senate scolds the NRC chairman for allowing the backfit [22]	Wed	12/21/2016
2nd CRGR public meeting [23]	Tue	2/28/2017
CRGR issues its report re NRC's backfitting practice [24]	Tue	6/27/2017
NRR staff rejects the premise underlying EDO's appeal decision [6]	Wed	9/6/2017

Some of the comments that follow will refer to this backfit and backfit appeal experience, which is notably missing from this NUREG-1409 guidance.

(1.04) "In 2016, the Executive Director for Operations (EDO) tasked the Committee to Review Generic Requirements (CRGR) with assessing the agency's backfitting requirements …". {pg 1-1, ln 13} The tasking occurred on June 9, 2016 [17], one week after Exelon filed its second-level appeal [4] of NRR's backfit order of 2015 [2], and two weeks before the chartering of a panel [18] to evaluate said appeal. This implies that there must have been some unidentified fault with agency's backfitting requirements. However, about a year later, the CRGR's report stated, "In assessing the adequacy of existing NRC requirements, guidance, criteria, and procedures, the CRGR identified that, in general, these documents are still effective and clear for the topics they cover." [24]

This NUREG-1409 guidance does not identify the NRC requirements, guidance, criteria, and procedures that the CRGR changed, and were included in MD 8.4. This NUREG-1409 guidance does not identify the rationale or even the origins of many of the revisions it publishes. Miranda-4

(1.05) "The amended rule does not require a cost justification … in cases of ensuring compliance with NRC requirements or conformance with written licensee commitments." {pg 1-3, ln 4}

"The other justifications do not require a backfit analysis. These exceptions to the requirement to perform a backfit analysis can be invoked if the proposed action meets one or more of the following criteria: … The action is necessary to bring a facility into compliance with applicable requirements or into conformance with written commitments by the licensee. … When the action is justified based on one or more of these exceptions, the NRC completes a documented evaluation in lieu of the more detailed backfit analysis. No finding of a substantial increase in overall protection is necessary." {pg 1-6, ln 29}

This NUREG-1409 guidance doesn't justify the consideration of cost required in cases wherein the compliance exception of the Backfit Rule is applied. (A Supreme Court decision [25] doesn't require additional cost considerations, since sufficient cost considerations were already required, as part of the Backfit Rule, decades before the court issued its decision.) Miranda-5

(1.06) “Only after determining that a proposed backfitting action does not meet the adequate protection exception can the staff consider whether the compliance exception applies. If the proposed action cannot be justified by one of the adequate protection or compliance exceptions, then the staff must complete a backfit analysis showing that the proposed action represents a cost-justified substantial increase in overall protection.” {pg 1-7, ln 19}

This statement implies that if the proposed action can be justified by one of the adequate protection or compliance exceptions, then the staff is not required to complete a backfit analysis showing that the proposed action represents a cost-justified substantial increase in overall protection. The NRC staff should not be directed to prepare a cost justification for a compliance-based backfit. Miranda-6

(1.07) NUREG-1409 states: “The NRC policy and the staff responsibilities for managing and implementing the backfitting and forward fitting provisions are contained in MD 8.4. {pg 1-13, ln 40} … “The program offices (i.e., the Office of Nuclear Reactor Regulation (NRR) and the Office of Nuclear Material Safety and Safeguards (NMSS)) have the obligation to impose backfitting or forward fitting actions. The office or the region that initiated a backfitting or forward fitting action supports NRR or NMSS with its obligation to impose the backfitting or forward fitting action. The Director of NRR or NMSS is responsible for generic backfitting actions and facility-specific backfitting or forward fitting actions arising from licensing or other headquarters actions, and the office staff performs the initial screening of the backfitting action and develops the documented evaluation or backfit analysis.”

The CRGR’s review report [24], of 2017, states: “The scope of the CRGR review included the agency’s implementation of backfitting and issue finality requirements and guidance, for … the offices with backfitting responsibilities. These are the Office of Nuclear Material Safety and Safeguards (NMSS), the Office of New Reactors (NRO), the Office of Nuclear Reactor Regulation (NRR), the Office of Nuclear Security and Incident Response (NSIR), OGC, the Office of Nuclear Regulatory Research (RES), and the four NRC regional offices.”

Three years ago, there were ten offices with backfitting responsibilities. Today, there are only two. Furthermore, these two have somehow acquired forward fitting responsibilities.

The NUREG-1409 guidance does not explain how the CRGR ascertained, in 2017, that the ten listed offices should bear backfitting responsibilities. It also does not explain how backfitting, and forward fitting responsibilities could be borne by only two offices. Miranda-7

(1.08) The CRGR should encourage the use of a provision in the current CRGR Charter (March 2011, ADAMS Accession No. ML110620618) that allows external stakeholders to request CRGR review of certain unresolved backfitting issues. Specifically, the CRGR Charter states:

“This review process is initiated by the external stakeholders through a letter to the CRGR Chairman. This letter will contain the issue(s) and will reference the communications between the sponsoring staff and the external stakeholders. The documentation should indicate that an unresolved backfit concern still exists after meaningful attempts to adequately resolve them with the sponsoring staff.” Miranda-8

“Any backfitting lessons learned should be institutionalized in NRC backfitting guidance documents such as NUREG-1409, ‘Backfitting Guidelines,’ (ADAMS Accession No. ML032230247) …”

The NUREG-1409 guidance does not identify any backfitting lessons learned. So, it cannot

institutionalize any backfitting lessons learned.

(1.09) The failure of the NUREG-1409 guidance to institutionalize any backfitting lessons learned may actually benefit the public interest, since institutionalizing of issues tends to remove them from public debate, and relieve the regulatory agency of the responsibility to support and defend the decisions it makes concerning those issues. Institutionalized issues are closed. The regulatory agency need not make any disclosures regarding closed issues. This is seen, very often, in the NRC staff's disposition of 10 CFR 2.206 petitions. These petitions are systematically closed, without exception, with a staff declaration that claims the petitions fail to present any "new significant information". The NRC staff does not back that conclusion with any evaluations, reports, or references to show that the petitions' issues had actually been considered and resolved. As far as 10 CFR 2.206 petitions are concerned, all their issues have been institutionalized. [26]

Miranda-8 cont'

(1.10) The NRC's reduction of the number of offices with backfitting authority could reduce the staff's workload, and range of responsibilities, and it could help licensees focus their appeals on just two offices. It could also reduce the likelihood that the NRC staff would issue backfit orders, in the future, since fewer reviewers would be examining licensing bases, and operations.

Miranda-9 - relates to Miranda-7

(1.11) "MD 8.4 states that the analysis must demonstrate that (1) there is a direct nexus between the new or modified requirement or regulatory staff position and the licensee's request, and (2) the imposition of the new or modified requirement or regulatory staff position is essential to the NRC staff's determination of the acceptability of the licensee's request." {pg 1-12, ln 1} Explain the direct "nexus".

What is the difference between a "new or modified requirement or a regulatory staff position" that is developed before a licensee's request, and one that is developed after a licensee's request.

Miranda-10

(1.12) Could a licensee compel the NRC staff to approve an unacceptable request, unconditionally, if the NRC staff cannot meet the MD 8.4 forward fit analysis requirements?

Miranda-11

(1.13) Licensees have often withdrawn requests that seemed unlikely to win the staff's unconditional approval. NUREG-1409 doesn't mention this alternative.

(1.14) This need not transform the regulator into a designer. For example, more than a decade before the backfit order of 2015 [2], five plants demonstrated compliance with the requirements related to event classification, event escalation, and specified in 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 by upgrading their PORVs. (No PSVs were involved, and no backfitting was required.)

The operators of five plants had already demonstrated compliance with the relevant requirements by upgrading their PORVs to safety grade quality, and qualifying them for water relief duty. They are:

Salem Units 1 and 2 [7]	6/4/1997
Millstone, Unit 3 [8]	6/5/1998
Diablo Canyon 1 & 2 [9]	7/2/2004

In retrospect, the PORV upgrades were faster, and cheaper than Exelon's backfit appeals, and the results were technically sound.

(1.15) "Safety significance can weigh heavily on proposed backfitting actions that rely on the compliance

exception justification. This may be true if a licensee has incurred costs because of a staff position that the NRC seeks to change and implement through the compliance exception." {pg 1-12, ln 28} Miranda-12

The compliance exception is an exception because, unlike the rest of 10 CFR 50.109, safety and costs are not relevant to the correction of errors or omissions (committed by the licensee and/or the NRC review staff).

(1.16) "To assist the staff, the NRC created a Backfitting and Forward Fitting Community of Practice, consisting of representatives from the Office of the Chief Information Officer, Office of Enforcement, Office of the Chief Human Capital Officer, NMSS, NRR, Office of the General Counsel, Office of Nuclear Regulatory Research, Office of Nuclear Security and Incident Response, and each of the regions. When staff members in these offices and regions have a backfitting, issue finality, or forward fitting question, they should reach out to their respective Community of Practice members." {pg 1-14, ln 36}

According to NUREG-1409, "the primary responsibility for issuing backfitting and forward fitting actions belongs to NRR and NMSS." {pg 1-14, ln 22} Does this make the NMSS and NRR members, of the Community of Practice, the experts in this body? If yes, then please describe how the guidance sets qualification requirements that apply, specifically, to the NMSS and NRR members of the Community of Practice. Miranda-13

(1.17) This NUREG-1409 guidance should make it clear that the newly established Community of Practice is limited to an advisory role. There should also be some guidance regarding disagreements between NRR or NMSS, and members of the Community of Practice. Disagreements could delay or prevent backfitting and forward fitting actions. Disagreements could also blur the lines of accountability among staff members Miranda-14

(1.18) What are the comparative purposes and functions of the member offices, in the Backfitting and Forward Fitting Community of Practice, with respect to the CRGR's list of offices with backfitting responsibilities [24] (i.e., NMSS, NRO, NRR, NSIR, OGC, RES, and the four NRC regional offices)? Do NRO, NSIR, OGC, RES, and the four NRC regional offices have any backfitting responsibilities, other than, perhaps, rendering advice as members of the Backfitting and Forward Fitting Community of Practice? Miranda-15

(1.19) "When the staff identifies an issue and is considering a backfitting or forward fitting action, the staff must also determine the safety significance of the issue. … After many years of safe operation, it may be less obvious as to why such a change is warranted when compliance was not previously mandated. If the licensee has incurred costs in reasonable reliance on a particular NRC position, then the need to provide a justification becomes more important. The fact that a plant has operated safely for a period of years does not mean, in and of itself, that a condition that has persisted for years should not be re-evaluated. But when many years have passed before the NRC determines that a regulation or requirement is not satisfied, and when the agency cannot demonstrate that compliance is necessary for adequate protection, identifying the safety significance should be the first step in ensuring that the change is still warranted." {pg 1-12, ln 25}

This guidance implies that the NRC staff could forgo a backfitting or forward fitting action, for a particular plant, "after many years of safe operation". The NRC staff of is advised that a certain random event is less likely or more likely, given a previous event or a series of events. This known as the Monte Carlo, or Gambler's Fallacy. The record of random events is not an indicator of future random events. In this case, the NUREG-1409 guidance can be misleading, and should be rejected. Miranda-16

(1.20) Note that overall past performance, for all operating plants, is skewed when serious accidents remove plants from the operating plant database (e.g., Three Mile Island, and Fukushima Daiichi).

(2) Screening and Justifying Backfitting Actions and Changes Affecting Issue Finality

(2.01) "Requirements for appeal processes are also outside the purview of backfitting provisions. An appeal process protects an individual's due process, which is guaranteed by the Fifth Amendment to the U.S. Constitution: 'No person shall … be deprived of life, liberty, or property, without due process of law ….'" {pg 2-2, Ln 21}

The NRC staff respects licensees' Fifth Amendment right to "due process of law"; but not the public's First Amendment right to "petition the Government for a redress of grievances". (This right can be linked to language in the Declaration of Independence (1776), which lists many colonists' (i.e., British subjects) grievances against their government, in London.) Today, 10 CFR §2.206 protects the people's right to petition the NRC to fulfill its duty to protect the public health and safety, by taking specific enforcement actions (e.g., modifying or revoking NRC-issued licenses) against licensees who are failing to meet safety-related regulations. According to 10 CFR §2.206, "Any person may file a request to institute a proceeding pursuant to §2.202 to modify, suspend, or revoke a license, or for any other action as may be proper." Miranda-17

The NRC's Inspector General (OIG) conducted an audit of the 10 CFR §2.206 petition process [26], and found that there were no petition-based orders issued as the result of any of the 38 petitions that it had examined. These 38 petitions were received over three-year period. If the NRC staff receives petitions at the rate of about one per month, then it can be concluded that the NRC has received hundreds of petitions during the 46 years since the promulgation of 10 CFR §2.206, on April 5, 1974. The NRC staff has yet to issue a single order, based upon a 10 CFR §2.206 petition.

The OIG concluded, "NRC has not issued orders in response to any of the thirty-eight (38) 10 CFR 2.206 petitions filed from fiscal year (FY) 2013 through FY 2016. The lack of such actions could adversely affect the public's perspective on the effectiveness of the agency's 10 CFR 2.206 petition process." [26]

The NRC staff, each of whose members is sworn to support and defend the Constitution …. and faithfully discharge the duties of the office (5 U.S.C. §3331, "Oath of Office"), has continually denied the public its First Amendment right to "petition the Government for a redress of grievances". Furthermore, the denials have been systematized, insofar as the NRC staff has recently revised its 10 CFR 2.206 evaluations process, in MD 8.11 [27], to make the denial process easier, and faster to perform (i.e., the revised process is described as having been "streamlined"). Miranda-17 cont'

This NUREG-1409 guidance reminds the NRC staff of its obligation to, "afford regulated parties the safeguards … that the courts have interpreted the Due Process Clause of the Fifth Amendment to the Constitution to impose," [11]; but makes no mention of its duty to respect the public's First Amendment right to "petition the Government for a redress of grievances". Miranda-17 cont'

(2.02) "In SRM-SECY-93-086, 'Backfit Considerations,' [28] the Commission explained that the 'substantial increase' criterion allows for qualitative consideration of factors to determine that a given proposed rule would substantially increase safety.'" {pg 2-18, ln 1}

When SECY-93-086 [28] was issued, the NRC staff asked the Commissioners to consider, "Whether the backfit provisions of 10 CFR 50.109 should be revised to address difficulties encountered in situations where a seemingly worthwhile change to the regulations cannot be adopted because of difficulties in demonstrating that the change represents a 'substantial increase in the overall protection of the public health and safety or the common defense and security' as required by 10 CFR 50.109."

The ACRS also considered the issue and roundly rejected any revisions of the backfit provisions of 10 CFR 50.109. It informed the Commissioners, "We are not persuaded that any action on the part of the Commission is warranted. The Commission has adequate authority to enforce actions that are appropriate in the public interest, and any weakening of the rule is likely to bring back the conditions the rule was originally designed to fix." [29]

Absent a change to 10 CFR 50.109, the NRC staff may consider qualitative factors; but may not use them in regulatory analyses and backfit analyses. [30] {pg 2-18, ln 6} However, this did not deter the EDO's backfit appeal review panel (BARP) from invoking "engineering judgment" [20] to justify the EDO's decision [5] to grant Exelon's appeal of NRR's backfit order. [2] If SECY-14-0087 [30] failed to prevent such an "evaluation" in [20], then how would this NUREG-1409 guidance be more objective? Miranda-18

(2.03) The right to appeal may be "outside the purview" of backfitting provisions; but appeal processes, and their implementation are well within the domain of NRC staff backfitting guidelines. Miranda-19 - related to Miranda-2

(2.04) The ACRS' view of this NUREG-1409 guidance with respect to 10 CFR 50.109, and the NRC staff's use of qualitative factors could mean that 10 CFR 5.109 must not be strengthened (e.g., by favoring a licensee's backfit appeal) as well as not be weakened. Miranda-20 - relates to Miranda-18

(2.05) Why is this NUREG-1409 guidance being revised in 2020 (in lieu of a change to 10 CFR 5.109), 27 years after the ACRS issued its letter [29] to the NRC chairman?

(2.06) "Matters that are outside the purview of the backfitting regulations include NRC actions implementing mandatory statutory requirements or requirements imposed by other Federal agencies. In these situations, the NRC has no discretion in the implementation of these requirements. Because the NRC must implement these requirements, the NRC does not need to justify any potential backfitting resulting from taking these actions." {pg 2-2, ln 1}

Explain why the NRC has no discretion in the implementation of requirements that imposed by other agencies. For example, suppose the DOE demands that all utilities that are in possession of plutonium fuel immediately surrender it to the DOE. This could require expensive, unplanned refueling outages that would not be justifiable in a backfit analysis. Would the NRC staff rely upon the "no discretion" clause in this guidance to mollify the protesting licensees? Miranda-21

(2.07) What is the mix of competencies that would become available in the membership of the NRC Backfitting and Forward Fitting Community of Practice?

(2.08) What are the requirements for individual membership on the NRC Backfitting and Forward Fitting Community of Practice? Part of Miranda-14 and 15

(2.09) How is the advice of the NRC Backfitting and Forward Fitting Community of Practice to be valued and used?

(2.10) According to Section III.A.6 of [31], the EDO "reviews and modifies any proposed facility-specific backfitting or forward fitting action on his or her own initiative or at the appeal of the affected licensee or stakeholders." However, this NUREG-1409 guidance limits backfitting to, "a holder of a power reactor construction permit or operating license issued under 10 CFR Part 50." {pg 2-4, ln 18}

This NUREG-1409 guidance does not recognize the possibility that a stakeholder, other than a licensee or other regulated entity, can be affected by a backfit order, and can file an appeal. For example, a backfit order that has the effect of exempting a licensee from complying with certain regulations or design criteria [5] could impede the NRC's ability to protect the health and safety of persons (i.e., public stakeholders) who live in the vicinity of the licensee's plant. This NUREG-1409 guidance should help the NRC staff process appeals received from public stakeholders. Miranda-22

(2.11 "If the regional administrator determines the issue constitutes backfitting, then the regional administrator will forward the issue to the office director for disposition and provide support as needed." {pg 2-8, ln 38}

This implies that a licensee could file a backfit appeal with the regional administrator, before beginning the first-level, and second-level appeals described in this NUREG-1409 guidance. It seems there are three levels of appeal, available to the licensee, not just two. If this is true, it should be addressed in the guidance. Miranda-23

(2.12) Question 4a asks whether "one or both of the adequate protection exceptions … apply." {pg 2-9, ln 2} It discusses one adequate protection exception, not two. What is the second adequate protection exception? Miranda-24

(2.13) "In a 2015 decision, Michigan v. Environmental Protection Agency, the United States Supreme Court held that, unless Congress has indicated otherwise, a Federal agency should consider the costs imposed on a regulated entity to comply with a new regulation." {pg 2-15, ln 32}

The compliance exception applies to situations wherein the NRC staff becomes aware of an omission or mistake of fact. It does not apply when the NRC staff seeks to impose a new regulation. part of Miranda-12

(2.14) The Backfit Rule's compliance exception can be applied when the NRC staff identifies errors or omissions in licensing submittals, or in its own reviews of licensing submittals. The compliance-based backfit is intended to restore the level of safety that was available at the time the operating license was issued, and lost when the licensee failed to comply with specific safety requirements. One of the conditions, required for a compliance-based backfit, specifies that the backfit order could be justified, "If the NRC had known about the error or omission at the time it issued the approval, the NRC would not have approved the licensee's method of compliance." {pg 2-13, ln 42}

"If a risk-informed evaluation shows that imposing the compliance backfit would result in at least a discernable safety benefit, then the staff should further inform the regulatory decision process with a consideration of the costs and benefits of the proposed compliance backfit." {pg 2-16, ln 16}

A compliance-based backfit would not result in any net safety benefit, whatsoever. A compliance-based backfit does not add safety. It merely restores safety. Costs cannot be weighed against benefits when no benefits exist. part of Miranda-12

(2.15) “After careful consideration of the issue with respect to the risk to public health and safety or the common defense and security, the available safety margin, the time period of the noncompliance, and the staff’s estimates of licensee costs for implementation of the compliance backfit …” {pg 2-16, ln23}

Consideration of the “time period of the noncompliance” is irrelevant. The NRC staff should not be advised to factor the Gambler’s Fallacy into its compliance backfit evaluations. part of Miranda-16

The “staff’s estimates of licensee costs for implementation of the compliance backfit” are irrelevant, since (1) costs are not a factor in a compliance backfit, and (2) the staff can rely upon receiving much higher cost estimates from the licensee, particularly in a backfit appeal. part of Miranda-12

(2.16) “This decision had direct implications for the NRC’s application of the backfitting provisions, especially the compliance exception. This decision did not affect the NRC’s implementation of adequate protection backfitting because the AEA requires implementation of adequate protection actions without the need to consider costs.” {pg 2-15, ln 36}

If the NRC staff becomes aware of an omission or mistake of fact, which would have prevented the staff from approving the licensee’s method of compliance, then the existence of said non-compliance indicates that it’s necessary to implement corrective adequate protection actions. Miranda-25

(2.17) “Although the extent of the cost consideration will necessarily be facility specific, factors that may be relevant are (1) the amount of time that has elapsed since the approval or decision that is now at issue and (2) the safety or security risk if the NRC does not take the backfitting action.” {pg 2-15, ln 49}

Unless component aging is concerned, risk is not time-dependent. Although some accidents are more likely to occur than others, all accidents occur randomly. Factors (1) and (2) are not relevant unless the NRC staff can show that the Gambler’s Fallacy applies. part of Miranda-12 and 16

(2.18) “When the compliance backfitting issue is identified shortly after the NRC issues its approval (e.g., within 2 years), a staff-prepared cost estimate of imposing the backfitting action using information developed during the original justification may be sufficient to satisfy the consideration of cost policy. But if significant time has passed since the staff made the decision in question (e.g., more than 10 years) for which the staff determines that a regulation or requirement is not satisfied, then the staff should identify the benefits of compliance and compare these benefits to the cost of achieving and maintaining compliance to ensure that costs have been adequately considered.” {pg 2-16, ln 2}

The Gambler’s Fallacy cannot be used to justify continued operation without compliance. part of Miranda-12 and 16

Furthermore, costs do not factor into backfits that compel adequate protection or compliance. There are no safety benefits to be realized from backfits that compel adequate protection or compliance, since these backfits merely restore the level of safety that the NRC staff thought was present when it issued the plant’s operating license, or approved the licensee’s LAR.

(2.19) “The definition of ‘substantial’ is ultimately a regulatory and policy determination. The determination, however, must be rational (i.e., not illogical) and supported by evidence or fact, as applicable.” {pg 2-17, ln 37}

The definition of "substantial" should be more objective, and specific than some "rational" judgment of the staff. This guidance, regarding the definition of "substantial" is useless.

Miranda-26

(3) Chapter 3, Forward Fitting

(3.01) "… unlike backfitting, forward fitting occurs only during licensing actions that are initiated voluntarily by a licensee." {pg 3-1, ln 11}

If a licensing action is initiated voluntarily by a licensee, then it can be withdrawn voluntarily by the licensee. Unlike backfitting, a licensee is not required to comply with forward fits or conditions that are attached to its voluntarily initiated licensing actions. The price for non-compliance is withdrawal of the licensing action request.

part of Miranda-11

(3.02) "The forward fitting policy applies to only those licensees that are also within the scope of backfitting provisions." {pg 3-1, ln 18}

Licensees can avoid meeting forward fitting requirements by withdrawing their LARS. So, the forward fitting policy does not always apply to licensees; but it always applies to the NRC staff.

part of Miranda-11

(3.03) "… requesting additional information, asking an audit question, or engaging in a verbal discussion during a licensing action review, that suggests or implies that the licensee should meet a new standard it is not currently required or proposing to meet or should revise its request to propose a new license condition." {pg 3-2, ln 45}

This guidance does not consider the possibility of an inconsistent application of forward fitting policy (e.g., asking one licensee to meet a new licensee condition; but not another licensee, which may have, or have had a similar LAR under review).

Miranda-26 - relates to 11

(3.04) Forward fitting has no regulatory basis; but it is treated, herein, like backfitting, which does. The Backfit Rule must be augmented, via rulemaking, to include forward fitting.

Miranda-27

(3.05) Licensees who object to forward fitting requirements have nothing but MD 8.4, and NUREG-1409 to support their right to file an appeal. Likewise, the NRC staff has only MD 8.4, and NUREG-1409 to guide it through an appeal, if it decides to consider it.

Miranda-28

(3.06) There are no criteria that the NRC staff can use to determine whether forward fitting requirement are adequately satisfied.

Miranda-29

(3.07) Forward fitting is different and distinct from backfitting. The NRC hasn't conducted a rulemaking to set requirements for forward fitting.

part of Miranda-27

(4) Backfitting and Forward Fitting Appeals

(4.01) "The NRC will accept appeals from only those licensees for which the NRC action constitutes a backfit or forward fit … The NRC will not accept appeals from NRC staff who disagree with an agency action or position." {pg 4-2, ln 20} MD 8.4 [31] states that the EDO, "Reviews and modifies any proposed facility-specific backfitting or forward fitting action on his or her own initiative or at the appeal of the affected licensee or stakeholders."

The NUREG-1409 guidance conflicts with MD 8.4, since it does not allow for consideration of appeals from stakeholders. part of Miranda-22

(4.02) During the NRC staff's review of a first-level appeal, "The panel must offer the licensee a public meeting to discuss its appeal." {pg 4-3, ln 29}

During the EDO's review of a second-level appeal, "The NRC must offer the licensee a public meeting in which the second-level appeal can be discussed with the panel reviewing the appeal." {pg 4-5, ln 34}

At both appeal levels, there is only the offer of a public meeting, and this offer is made only to the licensee. Public stakeholders are left out of the process. In the Exelon example [4], NRR convened a public meeting to discuss Exelon's first-level appeal [14]; and the BARP offered Exelon a public meeting to discuss its second-level appeal [20], which Exelon declined. Miranda-30

The NRC's Strategic Plan (NUREG-1614) [32] states: "The NRC's openness strategies are focused on three elements: (1) transparency, (2) participation, and (3) collaboration. " The NRC's Strategic Plan goes on to state, "Transparency promotes accountability by providing the public with information about the NRC's activities. More specifically, this means that public stakeholders should have timely access to clear and understandable information about the NRC's role, processes, activities, and decisions. Participation allows the public to contribute ideas and expertise so that the NRC can make regulatory decisions with the benefit of information from a wide range of stakeholders. These stakeholders should have a reasonable opportunity to participate meaningfully in the NRC's regulatory processes." Miranda-30 cont'

The BARP's omission of a public meeting was a mistake, since it was not in accordance with the NRC's transparency policy. [32] Unlike the BARP, the NRR appeal panel held a public meeting, without asking the licensee's permission. NRR was right, and the BARP was wrong. Miranda-30 cont'

Now, the NUREG-1409 guidance encourages the staff to follow the BARP's example, in future backfit appeals. This excludes public awareness and participation, and possibly conflicts with EO 13892. [11] Miranda-30 cont'

(4.03) Exelon filed its first-level backfit appeal on December 8, 2015. [3] The NRR appeal review panel held a public meeting [14], at which Exelon was represented by ten lawyers, headed by its Senior VP of Licensing and Regulatory Affairs & General Counsel. That appeal was denied on May 3, 2016. [15] Three Exelon executives, who had attended the public meeting, had several meetings with the NRC staff, in closed session, during the appeal panel's five-month review period.

Here are the details:

Exelon files its appeal with NRR	Tues	12/8/2015
NRC staff is visited by:		
1. Exelon's Assistant General Counsel	Wed	12/9/2015
2. Sr VP of Licensing and Reg Affairs & Gen Counsel	Fri	12/11/2015
3. VP of Licensing and Regulatory Affairs	Fri	12/11/2015
4. Exelon's Assistant General Counsel	Thu	12/17/2015
5. Exelon's Assistant General Counsel	Thu	1/7/2016
6. Exelon's Assistant General Counsel	Thu	1/21/2016

7. Exelon's Assistant General Counsel	Thu	3/3/2016
8. Exelon's Assistant General Counsel	Fri	3/4/2016
-- NRR public meeting to hear Exelon's appeal	Mon	3/7/2016
9. Exelon's Assistant General Counsel	Tue	3/8/2016
10. Exelon's Assistant General Counsel	Fri	3/11/2016
11. Sr VP of Licensing and Reg Affairs & Gen Counsel	Wed	3/23/2016
12. VP of Licensing and Regulatory Affairs	Wed	3/23/2016
13. Exelon's Assistant General Counsel	Tue	3/29/2016
14. Sr VP of Licensing and Reg Affairs & Gen Counsel	Wed	4/20/2016
NRR denies Exelon's appeal	Tue	5/3/2016

So, the NRC staff held a public meeting, and hosted 14 closed meetings with Exelon's legal staff. Three Exelon executives, all of whom were active in the appeal, had visited the NRC staff 14 times. That's almost three meetings per month, all of which took place during the NRR's appeal review period.

(4.04) The Exelon example includes a second-level appeal, filed with the EDO. The EDO appointed a five-member backfit appeal review panel (BARP), which offered Exelon and NEI, a strong supporter [13] Exelon's appeal, a public meeting. They declined the offer. The panel's report [5] states, "Both Exelon (Bradley Fewell, Senior Vice President of Regulatory Affairs) and NEI (Tony Pietrangelo, Senior Vice President and Chief Nuclear Officer) declined offers for a public meeting, but indicated a willingness to provide information if the Panel identified the need. … The Panel did not identify a need for additional information from either Exelon or NEI to complete the review documented in this report." The panel didn't extend this offer to any other stakeholders (e.g., members of the Public). The panel completed its review without convening a public meeting.

Perhaps Exelon didn't need a public meeting, since its "senior executives" always had the option of "dropping in" for private meetings with the EDO and other NRC officials. MD 3.5 [33] states: "Senior executives of a licensee, applicant, or a potential applicant request the opportunity to conduct a 'drop-in' visit or similar management meeting with the EDO, with other senior managers at agency headquarters, or with senior managers of the region in which their facility is located. Because these visits or meetings are usually limited to a general exchange of information not directly related to any regulatory action or decision, they would not typically be public meetings."

If a "drop in" visit is usually limited to a general exchange of information not directly related to any regulatory action or decision, then there is no reason to exclude the public. In practice, such "drop in" visits are almost always closed to the public. The NRC's visitors' log [19] shows that two Exelon executives, both of whom had attended the public meeting of March, 2016 [14], made seven visits to members of the NRC staff during the NRC's second-level appeal review (i.e., between June 2, 2016 [4] and September 15, 2016 [5]). One visitor was Exelon's Assistant General Counsel. The other visitor was Exelon's VP of Licensing and Regulatory Affairs. Then, on the day after the EDO's appeal decision was issued, Exelon's Assistant General Counsel paid a follow up visit.

Here are the details:

Exelon files its appeal with the EDO	Thu	6/2/2016

NRC staff is visited by:

1. Exelon's Assistant General Counsel	Mon	6/20/2016
2. Exelon's Assistant General Counsel	Tue	6/28/2016
3. Exelon's Assistant General Counsel	Thu	7/14/2016
4. Exelon's Assistant General Counsel	Thu	7/21/2016
5. Exelon's Assistant General Counsel	Tue	7/26/2016
6. Exelon's Assistant General Counsel	Tue	9/13/2016
7. Exelon's VP of Licensing and Regulatory Affairs	Wed	9/14/2016
EDO grants Exelon's appeal	Thu	9/15/2016
NRC staff is visited by:		
Exelon's Assistant General Counsel	Fri	9/16/2016

The public was not informed of these meetings; but the timing and principals are telling. The first meeting was held on June 20th, two days before the members of the EDO's hand-picked backfit appeal review panel (BARP) were announced, and its review charter was specified. [18] Then, on June 30th, the EDO and the BARP's chairman called Exelon's Senior Vice President of Regulatory Affairs & General Counsel (who had attended NRR's public meeting of March 7th. [14]) The record [19] indicates that the VP's assistant had visited the NRC just two days before the phone call.) This phone call can be added to the seven listed private meetings, to make a total of eight.

The BARP issued its report, which recommended that Exelon's appeal be granted, on August 23rd. This was less than three months after the BARP was formed, and just one month after Exelon's fifth visit.

Then there were two visits, on September 13th and 14th, followed by a third visit on the day after the EDO issued his appeal decision.

So, two Exelon executives, both of whom were active in the appeal, had visited the NRC staff seven times, or about once every ten workdays, during the BARP's review period. It seems that Exelon preferred seven closed meetings to one open meeting.

NUREG-1409 does not mention the NRC staff's practice of hosting closed meetings with licensees during an appeal review period, as allowed by MD 3.5. [33] Furthermore, NUREG-1409 does not allow that such meetings could have an undue influence upon the outcome of a first or second-level appeal. What information, if any, would the NRC staff disclose about the content of these meetings? Miranda-30 cont'

(4.05) The two appeals, in the Exelon example recorded 21 closed meetings involving NRC staff and Exelon's legal staff over a period of nine months. That's about one closed meeting every other week. Recall that members of the public do not get the privilege of private meetings with the NRC staff.

	1st Appeal	2nd Appeal
Result	Denied	Granted
Duration	4.8 months	3.4 months
Public meeting is offered to the licensee	No	Yes (declined)
Public meetings	One	None
Private meetings	14	8

(4.06) On September 15, 2016, the same day the EDO issued his backfit appeal decision [5], he issued SECY-16-0105 [34], which informed the Commissioners that, "NRC holds over 1,000 public meetings every year, and the NRC will continue to ensure meaningful opportunities for the public and other stakeholders to participate in NRC regulatory activities, consistent with the openness strategies in NRC's strategic plan." The NRC's Strategic Plan [32] states: "The NRC recognizes the public's interest in the proper regulation of nuclear activities and provides opportunities for citizens to be heard. For that reason, to be consistent with 'The NRC Approach to Open Government', the agency is committed to providing opportunities for the public to participate meaningfully in the NRC's decision-making process." The public did not get an opportunity to participate in the BARP's or in the EDO's decision-making process.

Failure to convene a public meeting, when considering a backfit (or forward fit) appeal, shuts out public stakeholders' participation in regulatory matters that concern them. This could erode the public's confidence in the NRC. part of Miranda-30

(4.07) A week after the EDO's appeal decision was announced, the NEI published a press release that described the EDO's decision as a "win for good government". [35]

The NUREG-1409 guidance respects licensees' right to due process (Fifth Amendment); but doesn't address the NRC's charge to render "good" government. In the Exelon example, "good" government means that the NRC staff is allowed to shut out public stakeholders; and grant privileged, private access to licensees. part of Miranda-30

(4.08) The NEI has been lobbying for "reform" of the NRC's backfitting process for more than a decade. [36] NEI's sense of "reform", as evidenced by the events of the Exelon example [2], seems to include the obliteration of the NRC staff's ability to implement the Backfit Rule, particularly the Rule's compliance exception.

(4.09) "The first-level appeal must include sufficient documentation to justify the licensee's basis for the appeal. The licensee must indicate deficiencies in the staff's position or provide other information that is relevant and material to the staff's action or position and supports the licensee's position for the appeal." {pg 4-2, ln 27}

The NUREG-1409 guidance does not specify criteria by which the NRC staff can judge whether the appeal's information is relevant or sufficient. If the 1st level appeal must include sufficient documentation to justify the licensee's basis for the appeal, and that appeal is denied, it can be concluded that its information is irrelevant or insufficient. What additional information would be required for a 2nd level appeal? Miranda-31

(4.10) In the Exelon backfit appeal [4] example, the BARP report [20] stated, "On the basis of its independent review, the Panel concluded that, in 2001 and 2004, the NRC staff did not misunderstand the qualification status of the PSVs … the Panel concluded that the NRC staff reviews and approvals of the 2001 and 2004 license amendments were not based on omissions or mistakes of fact."

The BARP report [20] also accepted Exelon's assertion that, "the compliance exception requires more than simply asserting that the prior staff approvals were wrong—the NRC must demonstrate that the prior approvals were erroneous because of an omission or mistake of fact at the time of the approval. The NRC has not made that case here."

The NUREG-1409 guidance does not consider whether the NRC staff is justified in conducting its own research that goes beyond facts of the appeal (i.e., to conduct a purposive investigation, which would include information that is not presented by the appellant), or whether it should limit itself to the information that is available in the appeal, and within the NRC. If an independent review is authorized, then it is necessary to allocate time and budget resources, to some specified limit. It is also necessary to apply quality controls, to avoid biased methods, and prevent reaching prescribed conclusions. Miranda-32

(4.11) In 2015, the NRC staff concluded that Exelon had not qualified its PSVs, and consequently issued its backfit order. [2] In 2016, after two appeals, the EDO followed the BARP's advice, and overruled the NRC staff. [5] In 2017, the NRC staff revisited the EPRI test results, and found that these results did not support Exelon's claim of qualification for water relief, "The staff now believes that referencing the EPRI test results as a demonstration of PSV closure capability following subcooled liquid discharge to be inappropriate." [6]

Miranda-33

This NUREG-1409 guidance does not review this experience, which contains a valuable history of a backfit, two appeals, and a needed correction. The experience records (1) the process the NRC staff followed, to properly prepare, review, edit, and issue a backfit order [2], (2) the NRC staff's evaluation of Exelon's 1st level appeal [15], which included a public meeting [14], (3) the BARP's purposive evaluation of Exelon's 2nd level appeal [20], (4) the EDO's revocation of the NRR staff's backfit order [5], and (5) the NRR staff's limited, selective correction (i.e., which apples to everyone but Exelon). [12]

(4.12) "The panel must consider all supporting staff analyses, licensee-submitted analyses, and any other information that is relevant and material to the appeal." {pg 4-3, ln 41}

It is possible that other information (e.g., analyses) could be available from other sources (e.g., public stakeholders). The NUREG-1409 guidance should include a call for such information at the time that information is being collected from the staff and licensee. Miranda-34

(4.13) "A second-level appeal is a written appeal of the outcome of the first-level appeal." {pg 4-4, ln 41}

The NUREG-1409 guidance should define and limit the content of a 2nd level appeal to the "outcome". A 2nd level appeal addresses flaws in the first-level appeal outcome (i.e., in the facts and/or logic of the evaluation, in the review process, or in the credentials and/or eligibility of the appeal evaluators. A 2nd level appeal could not be solely a repeat of the 1st level appeal. A 2nd level appeal would be expected to contain facts that were not presented in the 1st level appeal. Miranda-35

(4.14) "The panel should consist of managers at the deputy division director level or higher and an attorney from OGC, each with the appropriate technical and regulatory expertise and experience to thoroughly evaluate the action or position at issue and who have not previously participated in the initial action or staff position nor first-level appeal. The members of the panel should collectively have expertise in both the technical issues and the regulatory issues at hand." {pg 4-5, ln 24}

The NUREG-1409 guidance expects each individual member (e.g., the attorney) to have the "appropriate technical … expertise and experience to thoroughly evaluate the action or position at issue." Then the guidance relaxes the required individual qualifications of each member (including the attorney) to a single, collective qualification. Which is it? Miranda-36

(4.15) “If not, the EDO … assumes responsibility for the actions in this section that a panel would otherwise conduct.” {pg 4-5, ln 30}

The NUREG-1409 guidance blurs the lines of responsibility and accountability between the panel and his/her appointed panel. The guidance should clearly state that the responsibility and accountability are the EDO’s, regardless of the presence of a panel’s recommendations, right or wrong. Miranda-37

(4.16) “Summaries of all appeal meetings with the licensee should be prepared and placed in the NRC’s Agencywide Documents Access and Management System as specified in MD 3.5, “Attendance at NRC Staff-Sponsored Meetings.” {pg 4-3, ln 32}

MD 3.5 [33] states: “Senior executives of a licensee, applicant, or a potential applicant request the opportunity to conduct a ‘drop-in’ visit or similar management meeting with the EDO, with other senior managers at agency headquarters, or with senior managers of the region in which their facility is located. Because these visits or meetings are usually limited to a general exchange of information not directly related to any regulatory action or decision, they would not typically be public meetings.”

Such “drop in“ visits are almost always closed to the public. The NUREG-1409 guidance does not address the practice of holding closed meetings during appeal reviews.

(4.17) “The NRC staff should prepare summaries of all appeal meetings with the licensee within 30 calendar days of the meeting, as specified in MD 3.5.”

The NUREG-1409 guidance does not specify how the NRC staff should include summaries of the closed meetings, described as “drop in” visits by MD 3.5, in its summaries of all the appeal meetings with the licensee. Miranda-38 - related to Miranda-30

(5) Relationship of Backfitting and Forward Fitting to Other Processes

(5.01) “A clarification, such as one communicated through … a Regulatory Issue Summary, is a staff position that provides additional explanation of an existing requirement or staff position. {pg 5-1, ln 1}

Last year, the NRC withdrew [37] a Regulatory Issue Summary [38] that concerned what is herein described as “forward fitting”. The NRC also withdrew a draft revision [39] to the Regulatory Issue Summary. The NUREG-1409 guidance does not explain how the withdrawal of a “clarification” would be consistent with the guidance. Miranda-39

(5.02) “A clarification that does not impose a new or changed requirement or new or different staff position does not meet the definition of backfitting. However, proposed clarifications have the potential to impose new or additional requirements or staff positions (e.g., revoking previous staff positions); therefore, the staff should subject the proposed clarification to a backfitting assessment to verify that the clarification is not backfitting. If the original staff position allowed for multiple interpretations, and the staff is now trying to limit licensees to one interpretation, then that limitation would be a new staff position and, if imposed on a licensee, would require a backfitting or forward fitting justification. {pg 5-1, ln 29}

A clarification that does not impose a burden upon the licensee (e.g., a staff position that revokes a previous staff position or positions that the licensee has not implemented) is not be backfitting. The Miranda-40

NUREG-1409 guidance does not explain why a backfitting assessment would be necessary for such a clarification.

(5.03) “The licensee may formally submit a backfitting appeal in accordance with Chapter 4 of this 1 NUREG”. {pg 5-3, ln 1}

The licensee may not formally submit a backfitting appeal in accordance with this NUREG, or any other NUREG. A NUREG is not a regulation. The licensee must formally submit a backfitting appeal in accordance with 10 CFR 50.109, or another applicable backfitting regulation. Miranda-41

“The licensee … must submit the appeal in writing, in accordance with Section 50.4, “Written communications,” of Title 10 of the 17 *Code of Federal Regulations* (10 CFR), with a copy to the appropriate regional administrator and program office director (i.e., depending on the licensee, the Director for either the Office of Nuclear Reactor Regulation (NRR) or the Office of Nuclear Material Safety and Safeguards (NMSS)). For a second-level appeal, the licensee must submit the written appeal in accordance with 10 CFR 50.4, with a copy to the Executive Director for Operations (EDO). {pg 4-1, ln 15}

(5.04) “The GDC establish the … minimum requirements for development of the PDC for water-cooled nuclear power reactors. … The 10 CFR Part 50 licensing process requires approval of an applicant’s PDC as a condition for granting a construction permit. Before the NRC can issue an operating license … the Commission must find that the facility has been built in accordance with the PDC and any NRC-approved changes. Thus, … the Commission has already concluded that the design basis of the plant, as reflected in the PDC, meets or exceeds the minimum criteria in the GDC.” {pg 5-4, ln 27}

By the time a licensee receives an operating license, its PDCs are approved, and filed away with the plant’s PSAR. Since “the design basis of the plant, as reflected in the PDC, meets or exceeds the minimum criteria in the GDC”, it follows that any design that doesn’t meet GDC requirements cannot possibly meet PDC requirements. Therefore, a plant design fails to comply with GDC requirements must be remedied, possibly via compliance-based backfit order. No reference to PDC requirements is necessary. Miranda-42

(5.05) “The NRC can use the GDC as the source of a requirement for purposes of invoking the compliance exception only if a GDC provides more than just a performance standard and has not been superseded through the approval of the PDC (and requirements derived from those PDC are clearly meant to address the GDC at issue) and technical specifications.” {pg 5-5, ln 3}

GDCs (General Design Criteria) are design requirements, which are more than just performance standards. Performance standards are entered into technical specifications; and they’re derived from the results of analyses and evaluations of plant designs that are developed in accordance with the GDCs. (The results of said analyses and evaluations are reported in Chapter 15 of the FSAR. The consequent technical specifications follow in Chapter 16.) Therefore, technical specifications come after the GDCs are implemented, not before. Technical specifications assure that the plant is operated within the performance standards set by the results of analyses and evaluations reported in Chapter 15 of the FSAR. Miranda-43

(5.06) “Generally, issuance of an NRC guidance document (e.g., regulatory guide, NUREG, interim staff guidance) does not by itself impose regulatory requirements or staff positions on licensees. The NRC

would have to take a regulatory action, such as issuing an order, to impose a guidance document on a licensee." {pg 5-5, ln 19}

A regulatory action, such as issuing an order, would have to be based upon a regulation (e.g., 10 CFR 50.109), not NUREG-1409 or MD 8.4. [40]

Miranda-44

(5.07) "However, the staff's imposition of a guidance document provision on a licensee, whether orally or in writing, could constitute backfitting, and it could constitute forward fitting if related to a requested action from the licensee." {pg 5-5, ln 39}

The staff can impose a guidance document provision on a licensee only if it's part of a backfitting, based upon a regulation (e.g., 10 CFR 50.109). The staff cannot impose a guidance document provision as part of a forward fitting, since there is no regulation pertaining to forward fitting. The staff cannot impose a guidance document provision without a regulatory basis. [40] "Draft guidance does not constitute a staff position, so the staff should not use it in licensing decisions." {pg 5-6, ln 1}

Miranda-45

(5.08) "A relaxation is the modification of a regulatory requirement that reduces the obligations of a licensee or class of licensees. In almost every case, a relaxation is structured to provide licensees the option of continuing as previously licensed (that is, maintaining the status quo) or following the new, relaxed regulatory requirement or staff position. When the NRC relaxes requirements, the NRC must ensure the new framework provides for the adequate protection of the public health and safety and the common defense and security. Typically, this means that the alternative approach has either no decrease in safety or security or, if there is a decrease, it is very small." {pg 5-14, ln 29}

In 2016, the EDO rendered his decision on Exelon's 2nd level backfit appeal. [5] He stated, "Based on my review and discussions, I agree with the panel's conclusion that positions taken by the NRC staff in the 2015 backfit decision represent new and different staff views on how to address pressurizer safety valve performance following water discharge. Although these staff positions are conservative approaches that could provide additional safety margin, they do not provide an appropriate basis for a compliance backfit. In the absence of an assumed failure of the pressurizer safety valve to reseat, the concerns articulated in the backfit related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 are no longer at issue." He rejected the NRC staff's long-held assumption that PSVs cannot be relied upon to reseat, following water discharge, and then relaxed a wide range of requirements, concerning event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29. Most of these requirements have nothing to do with pressurizer safety valves, or their performance, under any circumstances. The result is that four large PWRs, in Illinois, may continue to operate "as previously licensed" (i.e., without demonstrating compliance with the cited requirements). Furthermore, this broad relaxation would not have been likely to win the NRC staff's approval, if it had been requested by Exelon in its original LAR (for a power uprating).

The NUREG-1409 guidance should evaluate the EDO's decision, as an example, and inform the NRC staff whether the "alternative approach has either no decrease in safety or security or, if there is a decrease, it is very small."

Miranda-46

(5.09) The NUREG-1409 guidance does not define "very small", as it's to be used when judging the safety impact of an "alternative approach".

Miranda-47

(5.10) The NUREG-1409 guidance does not address the concept of zero-sum regulation. Relaxation of requirements for the licensee can establish an "alternative approach" that decreases safety. That decrease in safety would have to be borne by the public. A decrease in safety can cause health problems, and/or a drop in property values. The licensee's gain would be achieved at the expense of the public stakeholders. [41] It seems fair that such zero-sum regulation would have to solicit (and carefully consider) input from affected public stakeholders. Yet, public meetings, during 1st and 2nd level appeals, are held at the option of licensees, not the NRC staff or the public.

Miranda-48 related to Miranda-30

(5.11) The NUREG-1409 guidance states, "However, if the NRC determines that the guidance document should be withdrawn because the methods contained are no longer an acceptable means of complying with the applicable requirements, then withdrawing that guidance document could constitute backfitting for those licensees using the guidance document." {pg 5-6, ln 28}

The relaxation of regulatory requirements, if taken far enough, can create a new, illegal backfit order. It would be equivalent to an imposition of a regulatory burden upon the public (i.e., the cost of a degradation in safety margin). It would be illegal because the requirements of 10 CFR 50.109 would not be met. The EDO did this, in his granting of Exelon's 2nd level backfit appeal. He went beyond the granting of an appeal. He added a series of exemptions, from several regulations and design requirements, which were not related to the "absence of an assumed failure of the pressurizer safety valve to reseat." [5]

Miranda-49

The NUREG-1409 guidance implies that such a backfit by relaxation is possible; but doesn't elaborate.

(5.12) In its 2017 memo [6], the NRC staff stated that it had no "confidence that these test (EPRI) results provide reasonable assurance that the PSVs will reliably close following subcooled liquid discharge." [6] So, the EDO's "absence of an assumed failure of the pressurizer safety valve to reseat" was unsupported. The NRC staff decided not to follow up with an action to compel Exelon to correct its analyses. The memo stated, "The staff now believes that referencing the EPRI test results as a demonstration of PSV closure capability following subcooled liquid discharge to be inappropriate, but does not recommend pursuing backfitting to address prior approvals based on the EPRI test data that determined that the PSVs could reseat even if there is leakage. … The staff does, however, recommend that approvals for qualification of pressurizer relief valves for liquid discharge based on reference to the EPRI test reports may not be appropriate, depending on plant-specific circumstances, going forward." It seems that the NRC staff will be wary of references to EPRI test results that claim the PSVs can reliably relieve water; but will allow Exelon's references to stand. This memo carves out a niche for Exelon's Byron and Braidwood plants. For them, and them alone, the EPRI test results are valid. It follows, too, that for these plants, there is "the absence of an assumed failure of the pressurizer safety valve to reseat", and this means these plants are exempt from meeting the requirements related to event classification, event escalation, and specified in 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29. (The exemption was granted even though there were several issues, in the backfit order that were not related to PSV performance, whatsoever.

(5.13) Exelon's privileged treatment is seen in other ways, too. For example, in 2017, the NRC staff met with Exelon and Global Nuclear Fuels, in closed session, to discuss Exelon's intention to load fuel assemblies of Russian origin into one of its Braidwood units. [42] The Russian company, TVEL, which is part of the Rosatom state corporation, produces fuel for nuclear power reactors. It has supplied fuel for "78 nuclear power plants, in 15 countries, and for research reactors, and for reactors on ships of the Russian fleet". Global Nuclear Fuel is a joint venture of GE, Toshiba and Hitachi, which is working with

TVEL to supply nuclear fuel to Westinghouse PWRs, in the US. Exelon's Braidwood plant would the first application in the US. [43]

There is no evidence that the NRC's Export Controls and Nonproliferation Branch had reviewed Exelon's plan with respect to sanctions that might be applicable to Rosatom and TVEL, (1) as Russian companies, and/or (2) as companies that are engaged in Iranian nuclear activities (e.g. Fordow, and Bushehr). TVEL has indicated that one of the reasons it's entering the US market is Ukraine's refusal to buy its nuclear fuel. Ironically, Ukrainian nuclear plant operators won't buy TVEL's fuel; but Exelon, America's largest nuclear plant operator, will. [44] (BTW, application to US reactor core loadings require a re-design of Russian fuel assemblies.)

It seems that now, the NRC staff regulates on two levels: one for Exelon, and one for everyone else. The NUREG-1409 guidance does not anticipate the establishment of the NRC staff's current, two-tier regulatory regime, and consequently has no advice regarding its implications in backfitting evaluations. Miranda-50

(5.14) Three years ago, NEI sent a memo to the NRC staff that stated, "We appreciate your consideration of our views on this issue and understand that work is underway to revise the agency's backfitting guidance in NUREG-1409 to conform to the positions provided in the Solicitor's Memo. We support that effort and look forward to providing industry's views at the appropriate time. We believe, however, that additional guidance (as described above) should be provided for the staff's use while work on NUREG-1409 is underway. Such guidance will ensure that the insights provided in the Solicitor's Memo are bought to bear in resolving important regulatory issues in the near term, and that lessons-learned from the 2016 Exelon backfitting appeal adequately institutionalized and implemented by the agency." [16]

This NUREG-1409 guidance does not mention the "2016 Exelon backfitting appeal". [3] Actually, that was two appeals, only one of which was granted. part of Miranda-46

(5.15) This NUREG-1409 guidance does not refer to any "lessons-learned from the 2016 Exelon backfitting appeal". It does not even refer to the 2016 Exelon backfitting appeals. It would be interesting to know why the NEI want these undefined "lessons-learned" to be "adequately institutionalized and implemented by the agency." part of Miranda-46

(5.16) This NUREG-1409 guidance does not institutionalize or implement one significant lesson-learned from 2016 Exelon backfitting appeals. This lesson, as expressed by the NRC staff, is that the premise upon which the BARP recommendations were based, is wrong. [20] The BARP report stated, " Finally, in the absence of a PSV failure to reseat, the Panel concluded that the concerns articulated by the NRC staff in the Backfit SE related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and GDCs 15, 21, and 29 are no longer at issue." In other words, the BARP dismissed the (conservative) assumption that a PSV will fail to reseat (after it relieves water). The conclusion was repeated in the EDO' appeal decision. [5] A year later, the NRC staff concluded, "Based on a re-assessment of the EPRI test results, which identified that certain testing had to be terminated to avoid excessive damage to the valves that could adversely impact the ability of a valve to reclose, the staff no longer has confidence that these test results provide reasonable assurance that the PSVs will reliably close following subcooled liquid discharge." [6]

part of Miranda-46

That is, the EDO's decision to grant Exelon's appeal was based upon a false premise. Furthermore, the NRC staff's conclusion was reached more than two years ago; but it doesn't appear as a "lesson-learned" or even as an example in this NUREG-1409 guidance.

(5.17) In 2016, the BARP stated, “Although limited in scope, the EPRI test results did not identify any generic issues with PSVs or PORVs sticking open following water discharge.” [20] A year later, the NRC staff had no “confidence that these test results provide reasonable assurance that the PSVs will reliably close following subcooled liquid discharge.” [6]

So, the backfit appeal review, conducted by BARP, began with the assumption that PSVs or PORVs will reliably reseat, following water discharge, and then looked for evidence that showed PSVs or PORVs will not reseat. The test results were inconclusive, so the BARP held its assumption was not refuted. On the other hand, the NRC staff looked at the same test results for evidence PSVs or PORVs will reliably reseat following water discharge. Since the test results were inconclusive, the NRC staff concluded that the test results did not show that PSVs or PORVs will reliably reseat following water discharge. The NRC staff could not agree with the BARP’s logic.

The BARP and the NRC staff looked at the same test results, and reached opposite conclusions. The BARP looked for results that showed the valves will not reseat. It didn’t find them, so the BARP concluded that the valves will reseat. The NRC staff looked for results that showed the valves will reseat. The staff didn’t find them either, so the NRC staff concluded that the valves will not reseat. The BARP’s logic began with reliable valves, found nothing to contradict that premise, and so concluded with reliable valves. The NRC staff’s logic began with unproven valves, found nothing to contradict that premise, and so concluded with unproven valves. The difference in the two approaches reveals the “lesson-learned”. The appeal review cannot begin with a desired conclusion (i.e., that PORVs or PSVs are capable of reseating after relieving water). They’re certified to relieve steam, not water. This is where the review must begin. Then it must be open to the facts (i.e., the test results) and follow them to the logical conclusion. The appeal review may conclude that the PORVs or PSVs are capable of reseating after relieving water; but only if the test results support the conclusion.

The “lesson-learned” is that the appeal review must not begin with a conclusion. That is, the review logic must not beg the question. This is not in the NUREG-1409 guidance.

part of Miranda-46

(5.18) In 2001, the NRC staff approved Exelon’s LAR for a power uprating based upon, *inter alia*, Exelon’s claim that despite EPRI test data that indicate the PSVs may chatter while discharging fluid, the resulting PSV seat leakage would be less than the discharge from one stuck-open PSV, which is an analyzed event. [45] The analyzed event to which Exelon referred, is the spurious opening of a PSV. The event analysis considers a PSV relieving steam, not water. The water discharge from one stuck-open PSV would be many times greater than the steam discharge from the same valve. The seat leakage comparison is inappropriate.

Therefore, the licensee’s docketed LAR contained a material, false statement. The NRC staff accepted it, and approved the uprating. The NRC staff (i.e., the BARP) accepted Exelon’s material, false statement again in 2016. [20]

This falsehood has been in the licensing basis of Exelon’s Byron and Braidwood plants for more than a decade and a half. In 2017, the NRC staff rejected the EPRI test results that Exelon cited to support its claim that its PSVs were capable of water relief. [6] Exelon has not been held accountable. On the contrary, Exelon has been rewarded, since it’s Byron and Braidwood plants are not required to comply with NRR’s backfit order, which was overturned by the EDO. [5]

(5.19) Another "lesson-learned", drawn from the uncited Exelon appeal, can be inferred from the BARP's report. [20] The BARP report states, "…also stresses the use of engineering judgment relating to the probability of component failure and does not suggest that valve "certification" or "qualification" in accordance with ASME standards should be invoked as the basis for such decisions." Apparently, the BARP review preferred engineering judgment to ASME standards.

Engineering judgment is just an educated guess that is made by an engineer. Engineering judgment is used, as a last resort, when adequate, reliable data are not available. The avoidance of engineering judgement, whenever possible, is fundamental to any review, or design, or evaluation. This is not addressed in the NUREG-1409 guidance. Miranda-51

(5.20) The BARP report states, "In interactions with the Panel, the NRR staff further stated that an omission or mistake of fact occurred when the licensee failed to acknowledge that the EPRI testing program did not evaluate water discharge from the pressurizer valves during extended high pressure safety injection for Byron and Braidwood. As discussed … the NRC staff evaluated the capability of the PSVs and PORVs during feedwater line break accidents, including water discharge. In these SEs, the NRC staff found that the performance of the PSVs and PORVs with water discharge was acceptable based on the EPRI tests. Therefore, the Panel also concluded that the licensee's reference to the EPRI testing program was not an omission or a mistake of fact." [20]

The BARP did not realize that the performance of PSVs and/or PORVs is not at all relevant to feedwater line break accidents. The backfit [2], and the appeals relate to water relief through the PSVs during anticipated operational occurrences (AOOs), which are relatively minor, frequently occurring events. Accordingly, AOOs are required, by the NRC, to remain AOOs (i.e., not develop into more serious events). Feedwater line break accidents are classified as the most serious type of accidents. In this most serious category of accidents, there is no requirement to prevent accidents from developing into a more serious category of events (i.e., a more serious category of events does not exist).

The BARP, and EDO are apparently not aware of the accident analysis methodology, and standards that are at the core of this backfit example. This area of ignorance is common to licensee, vendor, and regulator, and continues to this day.

(5.21) "The regulations in 10 CFR Part 54 delineate the scope of license renewal reviews. A license renewal review is … a matter of future aging management. The review will address aging management … 10 CFR 50.109 does not apply to matters within the scope of the renewal of power reactor licenses under 10 CFR Part 54. … This means that any proposed staff action on topics other than aging management taken under the current license during the application review could be subject to a backfitting assessment. Once the NRC issues the renewed license, 10 CFR 50.109 applies to the entire license with very limited exceptions." {pg 5-11, ln 2}

Nuclear plants are licensed to operate for a period of 40 years. In their licensing bases, "infrequent incidents" are described as incidents that, "may occur during the life of the particular plant (e.g., once in 40 years). Therefore, if a plant's operating license is renewed (i.e., authorized to operate for an additional 20 years), then the plant design must be modified to enable the plant to deal with more than one infrequent incident during its new design lifetime of 60 years. (Subsequent license renewals (SLRs) could extend plants' design lifetime to 80 years.) License renewals have been approved without a review of such design modifications, since they're not part of aging management programs.

Miranda-52

This NUREG-1409 guidance does not address how the NRC staff might apply 10 CFR 50.109, during operation under a renewed license, to compel a licensee to modify its plant design in order to comply with its plant's original design requirement (i.e., one infrequent event in 40 years).

(5.22) "Because rulemakings are not regulatory actions associated with a licensee request, it is not possible for rulemakings to involve forward fits." {pg 5-11, ln 32}

Miranda-53

The NUREG-1409 guidance should explain how rulemakings cannot apply to a licensee request. It is also not clear on how a guidance document can empower the NRC staff to impose forward fits, and give licensees leave to appeal. [40]

(6) Recordkeeping and Documentation

(6.01) "The NRC staff office responsible for the proposed backfitting or forward fitting should determine how the decision to reject the action should be documented, whether the existence of this documentation should be disclosed to external stakeholders, and whether the documentation should be made available to external stakeholders." {pg 6-1, ln 40}

Miranda-54

The NUREG-1409 guidance does not define "external stakeholders" nor distinguish them from public stakeholders.

Miranda-55

(6.02) The NUREG-1409 guidance does not specify the circumstances would cause any information concerning backfitting or forward fitting (or the disclosure of the existence of any such information) to be withheld from "external stakeholders".

(6.03) In 2019, the NRC staff withdrew [6] a Regulatory Issue Summary [34], and a draft revision to that summary [38] without any input from the public. Furthermore, the NRC staff's reasons for the withdrawals were hidden away in a memo [6] that was not available to the public. It was necessary to file a FOIA request (NRC-2019-000363) to obtain the memo. The memo that was produced was heavily redacted. An appeal to remove the redactions was denied. The denial explained that the redactions were cloaked by ongoing "deliberations". Nevertheless, the available portions of this memo disclosed that the NRC staff had lost confidence in the EPRI test results that Exelon had relied upon to support its claim that the PSVs, at its Byron and Braidwood plants, were qualified to relieve water. The EDO's appeal decision was based upon these test results. (They showed that the PSVs would be damaged if they relieved water.)

So, the EDO's appeal decision had no technical basis. Furthermore, the public had no prior notice of the RIS withdrawals, had no opportunity to comment, and had not been supplied with an adequate understanding of how the NRC staff reached its decision to withdraw. (BTW, this was one RIS, among more than 300 that were issued since 2000.) In short, a public backfit order, which was publically appealed, was reversed based upon a false premise. Then the reversal was then questioned by the NRC staff. However, the NRC staff's reasoning was withheld from the public. (It continues to be withheld.) [6]

Miranda-56

The NUREG-1409 guidance should take this example into account. Consequently, it doesn't render advice that is consistent with [32] and [11].

part of Miranda-55

(6.04) The NUREG-1409 guidance does not help the NRC staff identify the information to be withheld, and justify its withholding. It is necessary for the identification criteria and disclosure means to be

specified, for the NRC staff, vendors, licensees and members of the public.

For example, the BARP report called for a review of a Westinghouse Nuclear Safety Advisory Letter (NSAL) that described water relief through the PSVs in this way, "since the cause of the water relief is the ECCS (Emergency Core Cooling System) flow, the magnitude of the leak will be less than or equivalent to that of the ECCS (i.e., operation of the ECCS maintains RCS inventory during the postulated event and establishes the magnitude of the subject leak)". [46] In other words, Westinghouse describes critical two-phase flow as an issue of inventory control. This is inconsistent with the fundamental principles of fluid mechanics. In real life, the relief flow, from a vessel that is pressurized to 2,500 psia, will be many times greater than the flow that can be pumped into that vessel by the ECCS. This incredible flow model description was published by Westinghouse, copied by Exelon, and accepted by the NRC staff. (NSALs are issued, by Westinghouse, to its customers, to offer advice concerning questions of nuclear safety analysis, licensing and compliance, and other topics. NSALs are not subject to review by the NRC; but the NRC review staff sometimes encounters LARs that contain language copied from NSALs.)

Exelon was among several licensees that quoted the aforementioned NSAL water relief model in several LARs. [2] When the BARP noted it, and asked for an investigation, the EDO directed the NRR staff to handle it. A year later, the NRR staff completed its review, and issued its findings in a memo that was withheld from the public! [6] Oddly, this supernatural water relief model as not described by the BARP or the NRC staff. It was merely an unspecified question that was addressed in an unpublished memo. The resolution, if there was one, is still undisclosed. [32] [11] (This water relief model is still in several licensing bases. No licensees were ordered to correct them.)

(7) References

Miranda-57

(7.01) Not all the references are explicitly cited in the text. Some are buried in footnotes, without citations. This can be difficult to follow.

(7.02) References to the NRC's recent backfit, and backfit appeal experience are conspicuously absent. part of Miranda-46

(A) Appendices and Checklists

(A.01) "If the NRC's interpretation was (sic) consistently applied at the time of approval, then state that finding with a supporting basis. If there were inconsistent interpretation and application, then it is much less likely that an error or omission can be shown to have occurred. Note that conclusion with a supporting basis." {pg B-11, Step 3}

In the Exelon backfit appeal example, the BARP report [20] stated, "The compliance exception to the Backfit Rule is intended to address failures to meet known and established Commission standards because of omission or mistake of fact. New or modified interpretations of what constitutes compliance do not fall within the exception."

Miranda-58

This guidance does not resolve the difference between "new or modified interpretations", and "inconsistent interpretation". One, "inconsistent interpretation", implies that an error is less likely. The other, a "new or modified interpretation", implies that there is no error.

(A.02) "The NRC would likely not have issued its approval had it known of the error or omission." {pg B-

12, Step 9}

This checklist refers to just one error or omission, and asks whether it would be sufficient to deny an approval. The Exelon backfit [2] identifies several, unrelated errors and omissions. This checklist doesn't advise the reviewer who must consider the effects of a number of different errors and omissions. There might be no single error and omission that would cause the NRC staff to deny an approval; but the combined effect of several errors and omissions might be serious enough to merit a denial. Miranda-59

(A.03) "Costs of the compliance backfitting are considered in the NRC's documented evaluation of the backfitting action." {pg B-12, Step 10}

The costs of the compliance backfitting must not be considered in the NRC's evaluation of a compliance-based backfitting action. When the costs of compliance backfitting are considered, the Compliance Exception is no longer an exception. It becomes subject to dispute, by licensees, who could, and would, present their own cost considerations that indicate the backfit is not justified. This was evident five decades ago, when the AEC tried to regulate Anticipated Transients Without Scram (ATWS) to meet a specified safety goal. [47] At that time, the contested variable was not costs. It was likelihood of occurrence. It engendered many conflicting PRA studies that led to more than decade of failed reconciliations. The issue was settled by compromise, and a very odd regulation, 10 CFR 50.62. part of Miranda-12

Consideration of the costs of compliance backfitting effectively delete the Compliance Exception from the Backfit Rule. part of Miranda-12

(A.04) "Discuss briefly what the corrective action would cost, and how long the facility has been in the current situation. {pg B-12, Step 10}

This checklist doesn't provide any evidence that the regulator can reliably estimate the cost of a corrective action. Consideration of "how long the facility has been in the current situation" invites the use of the Gambler's Fallacy to decide questions that affect the public health and safety. Miranda-60 part of Miranda-16

(A.05) The inclusion of checklists, in this guidance, are troubling because they can restrict reviews to items in the checklists. Furthermore, it's easy to tick boxes in a checklist without understanding the issues, or their bases, and end the review with a false confidence that it's comprehensive, and complete. (Every year, I execute IRS "worksheets" to fill in my tax forms. I do this without ever knowing what the "worksheets" mean.) Miranda-61

(G) <u>General Comments</u>

(G.01) Although the title of MD 8.4 was changed, the title of NUREG-1409, Revision 1 was not. It remained unchanged, due to "administrative limitations". [48] NUREG-1409, Revision 1, continues to be called, "Backfitting Guidelines." NUREG-1409, Revision 1 should specify the "administrative limitations" that prevented the revision of the title of NUREG-1409; but not the title of MD 8.4. Miranda-62

(G.02) "Backfitting", "Issue Finality", and "Information Requests" are terms that stem from regulatory requirements in 10 CFR 50, 52, 70, 72, and 76. However, "Forward Fitting" is a term that does not have a regulatory basis. {pg 1-11, ln 34} MD 8.4's title bestows a false equivalence to "Forward Fitting" when it lists it, prominently, along with "Backfitting", "Issue Finality", and "Information Requests".

(G.03) NUREG-1409, "Backfitting Guidelines," Revision 1, provides guidance on the implementation of the policies provided in Management Directive 8.4, "Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests," dated September 20, 2019. [31] As late as October, 2018, the title of MD 8.4 was, "Management of Backfitting, Issue Finality, and Information Collection". [48]

Licensees had been complaining, for years, about the number (and nature) of the NRC staff's requests for information (RAIs). As a result, the Government Accountability Office (GAO) was asked to audit the NRC staff's RAI process. [49]

Sometime, in the 11 months between 2018 [48], and 2019 [31], "Information Collection" was replaced with "Information Requests". "Forward Fitting" was added during the same interval. "Forward Fitting" has no counterpart in 10 CFR 50.109, and no justification in rulemaking.

(G.04) Together, NUREG-1409, and MD 8.4 seem to be a maneuver to augment the protection against unexpected, possibly unnecessary expenses that is already extended to licensees via 10 CFR 50.109 without the bother of undergoing the rulemaking process. Furthermore, NUREG-1409 aggravates, and "institutionalizes" several errors that have become apparent in the NRC staff's backfitting experience (e.g., avoiding public meetings); but notably absent in this NUREG-1409 guidance. This maneuver illustrates the need to correct the faults in 10 CFR 50.109. The rulemaking process should be used to make the following modifications to 10 CFR 50.109: Miranda-63

(1) Eliminate the 2nd level appeal. Its existence gives the EDO an opportunity to overrule his expert staff. If the 2nd level appeal decision overturns the 1st level appeal decision, then the competence of the staff is rightly questioned. It also implies that the EDO is in possession of information or expertise that is not available amongst members of the NRC staff. The 2nd level appeal also gives appellants and their representatives (e.g., the NEI) an opportunity to exert undue influence upon the EDO's appeal evaluations and decision. [19] part of Miranda-63

(2) Require the NRC staff appeal panel to convene at least one public meeting during its deliberations.

(3) Prohibit all closed meetings, between NRC staff appeal panel, and appellants, and/or their representatives during its deliberations. part of Miranda-63

(4) Remove the Compliance Exception from 10 CFR 50.109, and write it into a new rule, which would not be linked, in any way, to backfitting or forward fitting. The new rule would be designed to correct errors and/or fill in omissions, to make a plant's licensing basis accurately reflect the plant's as-built design and/or authorized operation. The new rule would not be an Exception. It would be called something else (e.g., a Compliance Correction or Adjustment). The new rule would not be subject to any cost considerations, whatsoever. It would be comparable to a warranty that preserves, and implements the NRC's mandate to protect the public health and safety.

(G.05) Revise MD 3.5 to remove the doublespeak provision that grants licensees private access to the EDO and other senior officials. The MD 3.5 revision should give licensees, and public stakeholders equal access to NRC decision makers, in public meetings. Nothing would be withheld from the public, except designated proprietary information, as per affidavits for withholding, under applicable disclosure agreements. Miranda-64

(G.06) There is no background or rationale for adding a forward fitting policy into Management Directive

8.4.

(G.07) “Provisions analogous to the backfitting requirements, referred to as issue finality provisions, are set forth in 10 CFR Part 52, ‘Licenses, Certifications, and Approvals for Nuclear Power Plants.’” {pg iii, ln 17} “Issue finality” imposes backfitting restrictions, in 10 CFR 52, even before the plant is built and operating.

NUREG-1409 does not distinguish the issue finality provisions of 10 CFR 52 from the backfitting requirements of 10 CFR 50.109. Miranda-65

(G.08) Consider:
“Issue finality is a concept similar to backfitting that applies only to the holders of certain nuclear power reactor-related approvals under 10 CFR Part 52 …”. {pg xi, ln 8}
And
“Issue finality within 10 CFR Part 52 defines the changes the NRC can require for an approved facility license, permit, or design.” {pg xi, ln 45}

Miranda-66

The two statements seem to be contradictory. In the first statement, issue finality is likened to backfitting; and in the second statement, issue finality is linked to forward fitting. Please clarify the discrepancy.

(G.09) The revision of NUREG-1409 is the latest in a series of actions, taken by the NRC staff, which seem to serve the interests of industry (e.g., NEI and Exelon) at the expense of the public. There are many examples of such actions, available in the NRC’s ADAMS records. Here are four examples, all which are related to various backfitting issues. (There are many more examples that indicate the NRC’s regulatory practice and policy is trending toward industry interests, and self-service, and away from protection of the public health and safety. They’re not listed below, because there is not direct nexus to backfitting; but they can be supplied upon request.)

<u>(1) RIS 2005-29</u>

In 2005, RIS 2005-29 [38] informed licensees to expect questions pertaining to their compliance with the design requirement that prohibits the development of a minor transient into a more serious accident (i.e., the nonescalation requirement), particularly during reviews of power uprating LARs. By 2005, the operators of five plants had already demonstrated compliance with the nonescalation criterion by upgrading their PORVs to safety grade quality, and qualifying them for water relief duty. Exelon chose, instead, to rely on PSVs, which led, ultimately, to NRR’s backfit order of 2015. [2]

In 2016, during the NRR staff’s review of Exelon’s 1st level appeal [3], there was a public meeting [14], at which Exelon was represented by ten lawyers. At this meeting, they complained about RIS 2005-29. Exelon seemed to be concerned that RIS 2005-29 contained the beginnings of what NUREG-1409 calls “forward fitting”.

In 2019, the NRC staff withdrew RIS 2005-29. [37] (RIS 2005-29 was one of more than 300 documents of this category that were issued since 2000.)

<u>(2) Exelon’s backfit appeals</u>

This revision of NUREG-1409 notably omits NRR's backfit order of 1025 [2], and Exelon's subsequent backfit appeals. In general, NRR's backfit order, and its review of Exelon's 1st level appeal [3] were models of competent regulation, and procedure (e.g., a public meeting was held). The EDO's review of Exelon's 2nd level appeal [3] was basically a backward evaluation, beginning with a predetermined conclusion. For example, a public meeting was not held, because the review panel didn't need one, and the licensee didn't want one). Exelon's 1st level appeal was denied; and Exelon's 2nd level appeal was granted. It was the same appeal. Only the reviewers differed. In 2019, the NRC staff revisited the 2nd level appeal review, especially the underlying data, and found that it had "no confidence" [6] in the premise upon which the EDO relied to make his decision. [5]

Since this NUREG revision omits the two appeals, it can formulate advice without regard to this backfit experience. Consequently, it can recommend, for example, giving the licensee the option of a public meeting (which the licensee will typically decline), without evaluating the undesirable implications that would follow.

(3) Two-tier regulation

In 2019, when the NRC staff determined that Exelon's reliance upon certain PSV test results were inappropriate [6], it declined to apply the result to Exelon's backfit appeals. Going forward, the NRC staff stated that it would closely scrutinize PSV test results of the sort that Exelon used, for all licenses except Exelon's Byron and Braidwood plants. Therefore, the NRC staff is applying two levels of regulation: one for Exelon, and one for everyone else. This is an issue that is not addressed in this NUREG revision. It's an issue that doesn't surface because the NUREG omits the Exelon appeal experience.

(4) Logical errors

This revision of NUREG-1409 relaxes review requirements, and introduces the option of regulating by engineering judgment. It was engineering judgment that allowed the BARP to look at PSV test results that predicted serious valve damage would occur if water relief were allowed, and then conclude that water relief could allowed without serious consequence. This question doesn't arise, since this revision of NUREG-1409 doesn't consider the BARP's review of Exelon's 2nd level backfit appeal.

Exelon's application of PSVs to mitigate events that are over before the PSVs could ever reach their opening set pressure is an example of circular reasoning, or begging the question. The NRC staff erred in approving this strategy, in 2001; and tried to correct its error in 2015 [2]. However, the EDO's decision [5] reinstated the error, in 2016. The issue was discussed in 2018, in a peer-reviewed journal. [10] However, the NRC staff continues to use circular reasoning to this day.

This revision of NUREG-1409 also allows the NRC staff to forgo a backfitting or forward fitting action, for a particular plant, "after many years of safe operation". This guidance could lead the NRC staff into the Gambler's Fallacy trap. The experience of past random events is not a predictor of future random events.

(G.10) The Backfit Rule regulates the regulator, not the licensees, vendors, or members of the public. NUREG-1409 is revised to help the NRC staff comply with an expanded set of requirements that don't exist in the Backfit Rule. The use of a guidance document, in lieu of rulemaking, could be a violation of EO 13891. [40] Miranda-67

(G.11) The NRC is a well-known example of regulatory capture. [52] [53] (Although, its renown, as a captured agency, has lately been eclipsed by Boeing's takeover of the FAA, and regrettably, by the 346 deaths that ensued.)

Briefly:

(1) This revision of NUREG-1409 removes the public meeting from the backfit appeal procedure, and makes it an option for the appellant. It also conveniently neglects to access the experience, good and bad, which was available from the backfit order of 2015 [2], and the NRC staff's backfit appeal reviews. [15] [20]

(2) The concept of "forward fitting" does not appear in the 2013 version of MD 8.4 [54]. It shows up in the October, 2018 revision of MD 8.4. [50] "Forward fitting" gives licensees additional protection from certain forms of NRC regulation. Rulemaking had no role in the creation of "forward fitting". This is a late addition, since it is not in SECY-18-0049 [55], which issued in April, 2018.

(3) RIS 2005-29, which introduced the concept of "forward fitting", was withdrawn [37], without public notice, after Exelon had objected to its existence. [14] The public was denied an opportunity to comment, and also denied an explanation of the NRC staff's reasoning that led to its withdrawal decision. [6] So, a public backfit order, which was publically appealed, was reversed based upon a false premise, and this false premise was subsequently questioned by the NRC staff. However, the NRC staff's questions, and rationale were withheld from the public.

(4) The NRC staff has recently revised its 10 CFR 2.206 evaluations process, in MD 8.11 [27], to make the denial process easier, and faster to perform (i.e., the revised process is described as having been "streamlined"). The revision allows the NRC staff to delay petition evaluations, indefinitely, by putting them into "abeyance". This is another behavior that is typical of captured agencies. The Inspector General's audit report noted, ""NRC has not issued orders in response to any of the thirty-eight (38) 10 CFR 2.206 petitions filed from fiscal year (FY) 2013 through FY 2016. The lack of such actions could adversely affect the public's perspective on the effectiveness of the agency's 10 CFR 2.206 petition process." [26]

It seems the NRC's 10 CFR 2.206 petition process allows for routine *ex parte* communications. Neither MD 8.11 nor MD 3.5 prohibit a petition review board (PRB) from allowing licensees' representatives to attend any of its non-public meetings, or from otherwise communicating with PRB members, or responsible NRC officials during their evaluation of a petition. Perhaps a revision of MD 3.5 should be implemented, along with MD 8.11, since it supports MD 8.11. The MD 3.5 revision should be aimed at giving petitioners and licensees equal access to PRB members, and other NRC decision makers, at all times. Alternatively, equal access could be achieved simply by uniformly denying private access to everyone, during petition review periods.

(5) Three months after the EDO issued his backfit appeal decision [5], Senators Inhofe and Capito, of the Senate's Environmental and Public Works (EPW) Committee, sent a critical letter to Stephen Burns, Chairman of the NRC [22], in which they referred to the EDO's backfit appeal decision as, "a recent decision by the Executive Director regarding an industry appeal of a backfit which was not consistent with written regulations." Apparently, the EPW had decided, in retrospect, that this backfit order was improper, and that the NRC staff should not have issued it. The record will show that this backfit order was (1) scrupulously consistent with written regulations, and (2) confirmed by the NRR appeal review

panel. [15] It had undergone two years of reviews and revisions, by teams of engineers and lawyers, before it was issued. Less than nine months after the EPW letter [22] was issued, the NRR staff revealed that it had "no confidence" in the premise upon which the EDO relied to make his decision. [6] Consequently, the NRR staff discouraged licensees from relying upon this (faulty) premise, in their LARs. That is, all licensees were discouraged; but Exelon. [6]

This EPW letter stated that questions be sent to Annie Caputo, a committee majority senior policy advisor. This staffer, Annie Caputo, had worked as the congressional affairs executive manager for Exelon from 1998 to 2005. Six months before the date of the EPW letter, her name had been raised as a potential nominee for appointment to the NRC commission (May 11, 2016). By May, 2018, she had been installed at the NRC as a Commissioner. (The NRC chairman, to whom the EPW letter was addressed, resigned 11 months later.)

Apparently, it takes two years to advance from EPW committee staffer to NRC commissioner (or about the same time it takes to write a backfit order.) It's clear, by now, that the career path to Commissioner runs through a Senate committee. The latest commissioner was drawn from the Senate Appropriations Committee. In the old days of the Atomic Energy Commission (AEC), Commissioners were distinguished atomic scientists, not committee staffers. For example, Glenn T. Seaborg, who was chairman of the AEC, from 1961 to 1971, was the principal inventor or co-inventor of ten elements: plutonium, americium, curium, berkelium, californium, einsteinium, fermium, mendelevium, nobelium and seaborgium.

Regulation by a captured agency is worse than no regulation at all.

(G.12) This revision of NUREG-1409 does not improve upon the current version. It's worse. It's ambiguous, subjective checklists seem to be designed to mire the NRC staff in endless, pointless "evaluations" every time a backfit or forward fit is indicated. In the end, the guidance assures licensees that they will never again have to deal with a backfit order, or a forward fit from the NRC staff. If one is ever issued, then there will be two levels of appeal available, to obfuscate, and delay the implementation of backfits, and forward fits, indefinitely.

NRR's backfit of 2015 [2] clearly shows that the NRC staff is capable of preparing an effective backfit order that can withstand close scrutiny, technical and legal, without using this NUREG-1409 guidance. So, this revision of NUREG-1409 is worse than no revision at all.

Nomenclature

10 CFR	Title 10 of the Code of Federal Regulations
10 CFR 50.62	ATWS Rule
10 CFR 50.109	Backfit Rule
ACRS	Advisory Committee on Reactor Safeguards
ADAMS	Agencywide Documents Access and Management System (www.nrc.gov)
AEA	Atomic Energy Act of 1954, as amended

AEC	Atomic Energy Commission
ATWS	Anticipated Transients without Scram
CFR	Code of Federal Regulations
CRGR	Committee to Review Generic Requirements
EDO	USNRC Executive Director for Operations
EO	Executive Order
EPW	US Senate's Environmental and Public Works Committee
FOIA	Freedom of Information Act
FR	Federal Register
GAO	Government Accountability Office
GDC	General Design Criterion
LAR	License amendment request
MD	Management Directive
ML	Main Library
NEI	Nuclear Energy Institute
NMSS	Office of Nuclear Material Safety and Safeguards
NRR	Office of Nuclear Reactor Regulation
NUREG	NRC technical report designation
OIG	Office of the Inspector General
PDC	Principal Design Criterion
PRA	Probabilistic Risk Assessment
PRB	Petition Review Board
RAI	Request for additional information
RIS	Regulatory Issue Summary
U.S.C.	United States Code

References

[1] USNRC, Summary of Public Meeting of April 28, 2020 Regarding Draft NUREG-1409, “Backfitting Guidelines,” Revision 1, Meeting Identifier: 20200372, Category 3 (ADAMS No. ML20141L775)

[2] USNRC, letter from Anne T. Boland to Bryan Hanson, Exelon Generation Company, LLC, “Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2 – Backfit Imposition Regarding Compliance with 10 CFR § 50.34(b), GDC 15, GDC 21, GDC 29, and Licensing Basis (TAC Nos. MF3206, MF3207, MF3208, and MF3209),” dated October 9, 2015 (ADAMS No. ML14225A871)

[3] Exelon Generation Company, LLC, letter from J. Bradley Fewell to William M. Dean, U.S. NRC, “Appeal of Imposition of Backfit Regarding Compliance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.34(b), General Design Criteria (GDC) 15, GDC 21, GDC 29, and Licensing Basis," dated December 8, 2015 (ADAMS No. ML15342A112)
[4] Exelon Generation Company, LLC, letter from J. Bradley Fewell to Victor M. McCree, U.S. NRC, “Appeal of Imposition of Backfit Regarding Compliance with 10 CFR § 50.34(b), General Design Criteria (GDC) 15, GDC 21, GDC 29, and Licensing Basis,” dated June 2, 2016 (ADAMS No. ML16154A254)

[5] Result of Appeal to the Executive Director for Operations of Backfit Imposed on Byron and Braidwood Stations Regarding Compliance with 10 CFR §50.34(b), GDC 15, GDC 21, GDC 29, and the Licensing Basis, USNRC, September 15, 2016, (ADAMS Nos. ML16246A247, ML16236A202, ML16243A067, ML16246A150, and ML16236A208)

[6] Response to NRC-2019-000363, Freedom of Information Act (FOIA) Request, submitted by S. Miranda on July 18, 2019, for NRC memorandum from Eric R. Oesterle, et al. to Mirela Gavrilas et al., “Supporting Information for Staff Recommendations in Response to Executive Director for Operations Tasking in September 15, 2016, Exelon Backfit Appeal Decision,” dated September 6, 2017 (ADAMS No. ML19266A445) – This is a redacted version of ML17237C035, which is not available to the public.

[7] USNRC, Salem Nuclear Generating Station, Unit Nos. 1 and 2 (TAC Nos. M97827 and M97828) Amendment Nos. 194 and 177, dated June 4, 1997 (ADAMS No. ML011720397)

[8] USNRC, Issuance of Amendment, Millstone Nuclear Power Station, Unit No. 3, June 5, 1998 USNRC (ADAMS No. ML011800207)

[9] USNRC, Diablo Canyon Power Plant, Unit Nos. 1 and 2 - Issuance of Amendment Re: Credit for Automatic Actuation of Pressurizer Power Operated Relief Valves, USNRC (ADAMS No. ML041950260)

[10] Miranda S., “Anticipated Operational Occurrences That Could Develop into Serious Accidents”, ASME, ASME J of Nuclear Rad Sci. 2018; 4(2):020909-020909-14. doi:10.1115/1.4038160.

[11] Executive Order 13892, “Promoting the Rule of Law through Transparency and Fairness in Civil Administrative Enforcement and Adjudication”, dated October 9, 2019 (84 FR 55239)

[12] U.S. NRC, memorandum from Samuel Miranda to Christopher P. Jackson, “Making Non-Concurrence NCP-2013-04 Public,” dated February 28, 2014 (ADAMS No. ML14063A174)

[13] Nuclear Energy Institute (NEI), letter from Anthony R. Pietrangelo to William M. Dean, U.S. NRC, “Nuclear Energy Institute Comments in Support of Exelon Generation Company Backfit Appeal,” dated January 20, 2016 (ADAMS No. ML16207A352)

[14] USNRC, "Official Transcript of Proceedings – Public Meeting to Discuss Exelon Generating Company, LLC's Appeal of Compliance Backfit Affecting Byron and Braidwood Generating Stations," dated March 7, 2016. (ADAMS No. ML16070A364)

[15] USNRC, letter from William M. Dean to J. Bradley Fewell, Exelon Generation Company, LLC, U.S. Nuclear Regulatory Commission Response to Backfit Appeal - Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, dated May 3, 2016 (ADAMS No. ML16095A204)

[16] Letter from Joseph Pollack, Vice President, Nuclear Operations, and Interim Chief Nuclear Officer, NEI, to Victor McCree, Executive Director for Operations, USNRC, "Clarification of Issues Related to Compliance with General Design Criteria and Conformance to Licensing Basis Documents", June 6, 2017 (ADAMS No. ML17160A184)
[17] USNRC, memorandum from Victor M. McCree to Edwin M. Hackett, "Tasking Related to Implementation of Agency Backfitting and Issue Finality Guidance", dated June 9, 2016 (ADAMS No. ML16133A575)

[18] USNRC, memorandum from Victor M. McCree to Gary M. Holahan, K. Steven West, Thomas G. Scarbrough, and Michael A. Spencer, "Charter for Backfit Appeal Review Panel Associated with Byron and Braidwood Compliance with 10 CFR 50.34(b), GDC 15, GDC 21, GDC 29, and the Licensing Basis," dated June 22, 2016 (ADAMS No. ML16173A311)

[19] USNRC, Response to Freedom of Information Act (FOIA) Request (for NRC visitors logs), FOIA/PA-2017-0292, Stephanie Blaney, dated August 21, 2017

[20] USNRC, Report of the Backfit Appeal Review Panel Chartered by the Executive Director for Operations to Evaluate the June 2016 Exelon Backfit Appeal, Gary M. Holahan (OEDO), Thomas G. Scarbrough (NRO), Michael A. Spencer (OGC), Theresa V. Clark (OEDO), K. Steven West (NSIR), August 23, 2016, (ADAMS No. ML16236A208)

[21] Memo from Edwin M. Hackett, Chairman, Committee to Review Generic Requirements, to Victor M. McCree, Executive Director for Operations, "Summary of September 13, 2016, Committee to Review Generic Requirements (CRGR) Public Meeting With Interested Stakeholders Regarding Backfitting and the Backfitting Process," October 4, 2016 (ADAMS No. ML16251A475)

[22] Senators James M. Inhofe and Shelley Moore Capito, Environmental and Public Works Committee, LTR-16-0613, SECY Ticket, "Request for Graphical and Narrative Information Regarding Significant Operational and Performance Issues Facing the NRC", December 21, 2016 (ADAMS No. ML16538A577) (Note: This letter is not found in ADAMS by using the Accession No. It's found by searching for letters by the author, Inhofe.)

[23] Memo from K. Steven West, Chairman, CRGR, to Victor M. McCree, EDO, "Summary of February 28, 2017, Committee to Review Generic Requirements Public Meeting Regarding Backfitting and the Backfitting Process", dated March 22, 2017 (ADAMS No. ML17061A252)

[24] USNRC, Report of the Committee to Review Generic Requirements on its Assessment of the U.S. Nuclear Regulatory Commission's Implementation of Backfitting and Issue Finality Requirements and Guidance, Steven West, Anne Boland, Edwin Hackett, Brian McDermott, John Monninger, Scott Moore, Leonard Wert, and Edward Williamson, dated June 27, 2017 (ADAMS No. ML17174B161)

[25] 135 S.Ct. 2699 (2015), "Michigan v. Environmental Protection Agency." Oyez, 10 Feb. 2019, www.oyez.org/cases/2014/14-46

[26] USNRC, Office of the Inspector General (OIG)-17-23, “Audit of NRC’s 10 CFR §2.206 Petition Review Process”, August 22, 2017 (ADAMS No. ML17234A561)

[27] USNRC, Management Directive 8.11, Review Process for 10 CFR §2.206 Petitions, Approved July 1, 1999, and Revised October 25, 2000 (ADAMS No. ML041770328)

[28] SECY-93-086, “Backfit Considerations,” James M. Taylor, NRC Executive Director for Operations, to NRC Commissioners, “Backfit Considerations”, dated April 1, 1993 (ADAMS No. ML18128A031)

[29] Memo from Paul Shewmon (Chairman, ACRS) to Ivan Selin (Chairman, NRC), “Backfit Rule”, dated May 20, 1993 (ADAMS No. ML031900132)

[30] SECY-14-0087, “Qualitative Consideration of Factors in the Development of Regulatory 30 Analyses and Backfit Analyses,” dated August 14, 2014 (ADAMS No. ML14127A458)

[31] USNRC, Management Directive 8.4, “Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests,” dated September 20, 2019 (ADAMS No. ML18093B087)

[32] USNRC, NUREG-1614, Vol. 7, “Strategic Plan: Fiscal Years 2018–2022,” February 2018 (ADAMS No. ML18032A561)

[33] USNRC, Management Directive 3.5, Attendance at NRC Staff-Sponsored Meetings, December 23, 2011 (ADAMS No. ML112971635)

[34] USNRC, Policy Issue (information) from Victor M. McCree to the NRC Commissioners, SECY-16-0105, Staff Assessment of Issues Raised in Commission Meeting with Stakeholders”, September 15, 2016 (ADAMS No. ML 16270A588)

[35] Nuclear Energy Institute, “NRC Grants Exelon’s Backfit Appeal”, Sept. 22, 2016, www.nei.org/News-Media/News/News-Archives/NRC-Grants-Exelon-s-Backfit-Appeal (This article is no longer available on the NEI’s website; but a copy is available in the NRC’s response to FOIA request no. NRC-2017-000292. See foiaonline.gov.)

[36] “Summary of July 11, 2000, Meeting with the Nuclear Energy Institute and Nuclear Utility Backfitting & Reform Group Regarding Compliance Backfit Provision Issues”, Cynthia A. Carpenter, USNRC, July 21, 2000 (ADAMS No. ML003736437)

[37] USNRC, “Withdrawal of Regulatory Issue Summary 2005-29, and Draft Revision 1, ‘Anticipated Transients That Could Develop Into More Serious Events’”, May 15, 2019 (ADAMS No. ML19121A534)

[38] USNRC, Regulatory Issue Summary (RIS) 2005-29, “Anticipated Transients that Could Develop into More Serious Events”, December 14, 2005 (ADAMS No. ML051890212)

[39] USNRC, Draft Revision 1 to RIS 2005-29, “Anticipated Transients that Could Develop into More Serious Events,” dated July 13, 2015 (ADAMS No. ML15014A469) - Also published for public comment at 80 FR 42559.

[40] Executive Order 13891, “Promoting the Rule of Law through Improved Agency Guidance Documents”, dated October 9, 2019 (84 FR 55235

[41] E-mail message from David Collins (colldm@gmail.com) to Commissioners Svinicki, Apostolakis, Ostendorff, and Magwood, “KINS checklist for assessing regulatory capture - does NRC even discuss the problem of capture?” May 07, 2014 (ADAMS No. ML14128A431)

[42] J.S. Wiebe, USNRC, “Summary Of March 6, 2017, Closed Meeting With Exelon Generation Company, LLC, on a Future Exemption Request to Place Lead Test Assemblies in the Braidwood Reactor (CAC Nos. MF9276 and MF9277), dated March 27, 2017 (ADAMS No. ML17074A256)

[43] Exelon’s request for authorization for the use of up to eight Joint Stock Company ‘‘TVEL’’ (Fuel Company of Rosatom) TVS–K lead test assemblies (LTAs) in non-limiting reactor core locations for operation and evaluation, Federal Register / Vol. 84, No. 5 / Tuesday, January 8, 2019 / Notices, https://www.regulations.gov/document?D=NRC-2018-0277-0001

[44] Docket ID NRC–2018–0277, Comments regarding proposed use of ‘‘TVEL’’ (Fuel Company of Rosatom) TVS–K lead test assemblies (LTAs) in Exelon’s Braidwood Station, submitted by Ralph Caruso and Samuel Miranda, February 7, 2019 (ADAMS No. ML19078A252)

[45] U.S. NRC, letter from George F. Dick, Jr., to Oliver D. Kingsley, Exelon Generation Company, LLC, “Issuance of Amendments; Increase in Reactor Power, Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2 (TAC Nos. MA9428, MA9429, MA9426, and MA9427),” dated May 4, 2001, (ADAMS No. ML033040016)

[46] NSAL-93-013, G.G. Ament and K.J. Vavrek, Westinghouse ESBU, June 30, 1993, and NSAL-93-013, Supplement 1, J.S. Galembush, Westinghouse ESBU, October 28, 1994 (ADAMS No. ML052930330)

[47] USAEC, “Technical Report on Anticipated Transients without Scram for Water-Cooled Power Reactors”, WASH-1270, UC-78, September, 1973

[48] Memo from M. Doane (EDO) to the NRC Commissioners, Supplement to SECY-18-0049, “Management Directive and Handbook 8.4, ‘Management of Backfitting, Issue Finality, and Information Collection’”, dated October 22, 2018, (ADAMS No. ML18253A002)

[49] GAO-17-344, “Efforts Intended to Improve Procedures for Requesting Additional Information for Licensing Actions Are Under Way” (Accessible Version), April 2017

[50] Memo from M. Doane (EDO) to the NRC Commissioners, Supplement to SECY-18-0049, “Management Directive and Handbook 8.4, ‘Management of Backfitting, Issue Finality, and Information Collection’”, dated October 22, 2018, (ADAMS No. ML18253A002)

[52] “NRC Coziness with Industry, Nuclear Regulatory Commission Fails to Maintain Arm’s Length Relationship with the Nuclear Industry, An Investigative Report”, Subcommittee on General Oversight and Investigations, Committee on Interior and Insular Affairs, U.S. House of Representatives, 100th Congress, First Session, December 1987

[53] Tom Zeller Jr., “Nuclear Agency Is Criticized as Too Close to Its Industry”, May 7, 2011, http://www.nytimes.com/2011/05/08/business/energy-environment/08nrc.html

[54] USNRC, Management Directive 8.4, “Management of Facility-Specific Backfitting and Information Collection,” dated October 9, 2013 (ADAMS No. ML12059A460)

[55] USNRC, SECY-18-0049, “Management Directive and Handbook 8.4, ‘Management of Backfitting, Issue Finality, and Information Collection’”, April 18, 2018 (ADAMS Package No. ML18072A150)