

**POLICY ISSUE**  
**(NOTATION VOTE)**

August 14, 2014

SECY-14-0087

FOR: The Commissioners

FROM: Mark A. Satorius  
Executive Director for Operations

SUBJECT: QUALITATIVE CONSIDERATION OF FACTORS IN THE DEVELOPMENT OF  
REGULATORY ANALYSES AND BACKFIT ANALYSES

PURPOSE:

The purpose of this paper is to provide the Commission with the U.S. Nuclear Regulatory Commission (NRC) staff's recommendation for qualitatively considering factors in regulatory analyses and backfit analyses as directed by Staff Requirements Memorandum (SRM)-SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems for Boiling Water Reactors with Mark I and Mark II Containments," dated March 13, 2013.

SUMMARY:

In regulatory analyses and backfit analyses, the NRC staff considers many factors both quantitatively and qualitatively, which is consistent with NRC guidance and past Commission direction. Specifically, qualitative consideration of factors is used through NRC risk-informed decisions, adequate protection determinations and cost-justified substantial safety enhancements. Such qualitative evaluations arise when the analysis does not lend itself to a quantitative evaluation due to, for instance, lack of methodologies or data. The use of qualitative considerations is also consistent with other federal and international agencies' practices. In particular, the Office of Management and Budget has published regulatory guidance highlighting that a "good regulatory analysis" includes both qualitative and quantitative considerations. Given the significant precedent for qualitatively considering factors, both within the NRC and externally, the staff has concluded that the current regulatory framework is sound. Nonetheless, the staff recognizes that the lack of specific guidance for how to qualitatively consider factors has led to a perception that such qualitative evaluations can be used arbitrarily. Thus, the staff proposes to update cost-benefit guidance to include a set of

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*SECY NOTE: This paper, with the exception of enclosure 4, will be released to the public in 10 working days.*

methods that could be used for qualitative consideration of factors within a cost-benefit analysis for regulatory analyses and backfit analyses. This approach would lead to greater transparency and consistency of NRC decisions. If approved by the Commission, this guidance development would be incorporated into the staff's planned cost-benefit updates that were described in SECY 14 0002, "Plan for Updating the U.S. Nuclear Regulatory Commission's Cost Benefit Guidance," dated January 2, 2014.

#### BACKGROUND:

On November 26, 2012, the NRC staff recommended modifying boiling-water reactors (BWRs) with Mark I and Mark II reactor containment venting systems by adding engineered filters described in SECY-12-0157. The addition of engineered filters to reactor containment venting systems would limit the release of radioactive materials and would improve the reliability of these systems during severe accident conditions. The staff based its recommendation on a quantitative analysis supplemented by a qualitative analysis. The qualitative analysis for SECY-12-0157 provided the necessary supplemental factors for a sufficient cost justification for installing the engineered filters (i.e., cost-benefit).

In response, the Commission directed the NRC staff, in SRM-SECY-12-0157, to require BWR licensees with Mark I and Mark II containments to upgrade or replace the reliable hardened vents with a containment venting system that is designed and installed to remain functional during severe accident conditions (by preparing and submitting to the Commission a draft modification of Order EA-12-050) and to develop a rulemaking for filtering strategies with drywell filtration and associated severe accident management of BWRs with Mark I and Mark II containments. In addition, the Commission directed the staff, independent of the issue involving BWRs with Mark I and Mark II containments, to "seek detailed Commission guidance regarding the use of qualitative factors in a future notation voting paper." The focus of this paper is on the qualitative consideration of factors in regulatory analyses and backfit analyses for all NRC-licensed activities.<sup>1</sup>

It is important to note the broader context for this paper on qualitative analyses. First, it is part of the NRC staff's plan for updating the cost-benefit guidance found in SECY-14-0002. In addition, SECY-14-0002 notes that this paper is linked to SECY-13-0132, "U.S. Nuclear Regulatory Commission Staff Recommendation for the Disposition of Recommendation 1 of the Near-Term Task Force Report," dated December 6, 2013, specifically through Improvement Activity 2, "Establish Commission Expectations for Defense-in-Depth," as defense-in-depth has historically been a factor subject to qualitative consideration by the Commission and the staff in a variety of policy and licensing issues. Furthermore, SECY-13-0132 states that the Risk Management Regulatory Framework (RMRF) Working Group "is exploring an RMRF policy statement, which would be an overall agency policy statement broadly covering a risk management decisionmaking process where defense-in-depth would be a key element." In SRM-SECY-13-0132, the Commission disapproved the staff's proposed Improvement Activity 2<sup>2</sup>

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<sup>1</sup> Although analyses under the National Environmental Policy Act are not in the scope of this paper, the staff notes that Title 10 of the *Code of Federal Regulations* (10 CFR) Section 51.71(d) states that draft environmental impact statements will "to the fullest extent practicable, quantify the various factors considered." In addition, the regulation at 10 CFR 51.71(d) states that "to the extent that there are important qualitative considerations or factors that cannot be quantified, these considerations or factors will be discussed in qualitative terms."

<sup>2</sup> Specifically, under Improvement Activity 2, the staff proposed the development of a defense-in-depth policy statement that would have included the definition, objectives, and principles of defense-in-depth; associated implementation guidance

regarding defense-in-depth and directed that the objectives of the activity instead be reevaluated in the context of the Commission direction on the RMRF policy statement. The staff held a Category 3 public meeting on May 28, 2014, to seek public feedback on SECY-14-0002 and the staff's qualitative consideration of factors. The results of that meeting informed this SECY paper.

Because of the nature of these prior NRC staff actions and Commission directions, the staff will present to the Commission in this notation vote paper the current practices and guidance for the consideration of qualitative factors and a recommendation for future consideration of such factors.

### Qualitative Consideration of Factors within the NRC

In regulatory analyses and backfit analyses for nuclear materials and nuclear power plants, the NRC staff considers many factors both quantitatively and qualitatively, although as discussed later, backfit analyses are limited in the kinds of factors which may be considered. Some reasons which may lead the staff to qualitatively consider a factor rather than quantify it include the following:

- no commonly accepted quantitative measure;
- lack of methodologies to accurately quantify the factor; and
- lack of data to apply to a given quantification methodology.

NRC guidance allows for the qualitative consideration of factors. Revision 4 to NUREG/BR-0058, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," issued September 2004, (hereinafter referred to as the Guidelines), identifies NRC cost-benefit guidance as follows:

Estimated [costs] and [benefits]<sup>3</sup> should be expressed in monetary terms whenever possible and expressed in constant dollars from the most recent year for which price adjustment data are available. Consequences that cannot be expressed in monetary terms should be described and quantified in appropriate units to the extent possible.... However, the staff needs to make every reasonable effort to apply alternative tools that can provide a quantitative perspective and useful trends concerning the value of the proposed action. Even inexact quantification with large uncertainties is preferable to no quantification, provided the uncertainties are appropriately considered.... [Costs] and [benefits] that are determined to be unquantifiable should be identified and discussed qualitatively.

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containing decision criteria for ensuring adequacy of defense-in-depth; and conforming guidance to ensure integration of defense-in-depth with risk.

<sup>3</sup> NUREG/BR-0058 uses the terms "impacts" and "values" instead of "costs" and benefits." The term "impacts" is defined as "[t]he costs anticipated from a proposed regulatory action such as, but not limited to, the (1) direct costs to the NRC and Agreement States in administering the proposed action and to licensees and others in complying with the proposed action, (2) adverse effects on health, safety, and the natural environment, and (3) adverse effects on the efficient functioning of the economy or private markets." The term "values" is defined as "[t]he beneficial aspects anticipated from a proposed regulatory action such as, but not limited to, the (1) enhancement of health and safety, (2) protection of the natural environment, (3) promotion of the efficient functioning of the economy and private markets, and (4) elimination or reduction of discrimination or bias." NUREG/BR-0058, Rev. 4, p. 22.

An attribute should not be omitted from a regulatory analysis document simply because it is determined to be unquantifiable.<sup>4</sup>

Simply stated, the NRC guidance directs the NRC staff to quantify benefits and costs of a proposed regulatory action to the extent possible. When it is not feasible to quantify benefits and costs, the staff must discuss nonquantifiable elements in qualitative terms. It is also important to consider the inherent uncertainties associated with qualitatively considering factors. This current guidance is consistent with NRC precedent.

Prior to 1983, regulatory analyses were called “value-impact” analyses. These analyses followed the value-impact guidelines in SECY-77-388A, “Value-Impact Guidelines,” dated December 19, 1977. Beginning with this guidance, the NRC staff was instructed to consider, both qualitatively and quantitatively, factors in assessing the incremental value of proposed alternatives in providing “the decisionmaker (e.g., the Commission) with an estimate of what would happen if a certain decision rather than another is made.”<sup>5</sup> The NRC issued the initial version of the Guidelines in 1983 and the initial version and all subsequent revisions directed the staff to qualitatively consider factors in preparing regulatory analyses.

The Commission adopted the NRC staff’s backfitting requirements as self-imposed restrictions on the agency’s actions (i.e., a statutory requirement for backfitting limitations does not exist). In 1970, the NRC established the Backfit Rule for nuclear power reactors in 10 CFR 50.109, “Backfitting.”<sup>6</sup> In regard to backfitting under 10 CFR 50.109, the Commission stated in SRM-SECY-93-086, “Backfit Considerations,” dated June 30, 1993, that the “substantial increase” criterion “allow[s] for qualitative [consideration of factors to determine] that a given proposed rule would substantially increase safety.” In backfitting, the benefits (both quantitative and qualitative) are limited to health and safety or common defense and security factors.

The current practice at the NRC, with respect to the qualitative consideration of factors in regulatory analyses and backfitting analyses, is informed by the guidance documents NUREG/BR-0058, NUREG/BR-0184, “Regulatory Analysis Technical Evaluation Handbook,” January 1997, and NUREG-1409, “Backfitting Guidelines,” June 1990. Generally, these guidance documents describe how to estimate values for use in a cost-benefit analysis. These guidance documents also provide that the NRC staff should use a qualitative analysis for those attributes when there is not enough data, or when there are no accepted models to support a

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<sup>4</sup> NUREG/BR-0058, Rev. 4, p. 24.

<sup>5</sup> SECY-77-388A (ADAMS Accession No. ML12234B122), p. 17. Commission direction is based upon Commission comment in an August 5, 1977, memo from SECY to the EDO provided as Enclosure A to SECY-77-388 and discussion during the briefing for Commissioner Kennedy.

<sup>6</sup> The regulations at 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” establish the analogous backfitting provisions that apply to early site permits and standard design certifications, which the staff refers to as “issue finality” provisions. These issue finality provisions, which differ from those in 10 CFR 50.109, are 10 CFR 52.39, “Finality of Early Site Permit Determinations,” 10 CFR 52.63, “Finality of Standard Design Certifications,” 10 CFR 52.59, “Criteria for Renewal” (addressing finality during renewal of standard design certifications), 10 CFR 52.83, “Finality of Referenced NRC Approvals; Partial Initial Decision on Site Suitability,” and 10 CFR 52.98, “Finality of Combined Licenses; Information Requests.”

The backfit requirements for materials facilities, each entitled “Backfitting,” are 10 CFR 70.76, 10 CFR 72.62, and 10 CFR 76.76. These provisions are similar to the reactor backfit requirements; however, some differences do exist. For example, the backfit provision in 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material,” has limited applicability (i.e., backfit provisions apply only to Subpart H, “Additional Requirements for Certain Licensees Authorized To Possess a Critical Mass of Special Nuclear Material,” of 10 CFR Part 70).

quantitative analysis. These NUREGs, however, provide no specific guidance on which tools to use for the qualitative evaluation of factors, or the relative importance of factors for cost-benefit analysis outcomes. The analyst has a degree of flexibility and ability to choose evaluation techniques that are meaningful to the decision. The staff has qualitatively considered factors in the majority of NRC regulatory analyses and backfitting analyses.

Enclosure 1 provides a list of past NRC regulatory actions since 1998 for which qualitative considerations were elements in the NRC staff's recommendation and a list of the factors which were qualitatively considered in these past actions.

### *NRC Risk-Informed Decisions*

The technical and policy bases for the qualitative consideration of factors are well established within the NRC's regulatory processes. The Commission's Safety Goals and Probabilistic Risk Assessment Policy Statements include the importance of qualitatively considering factors, such as the NRC's defense-in-depth philosophy and analysis uncertainties. Similarly, the NRC staff's integrated risk-informed approach includes the qualitative consideration of factors, following the guidance in Revision 2 to Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," (May 2011). Regulatory Guide 1.174 states that decisions "are expected to be reached in an integrated fashion, considering traditional engineering and risk information, and may be based on qualitative factors, as well as quantitative analyses and information."<sup>7</sup> In addition, fuel cycle facility applicants and licensees are allowed to use qualitative methods in their integrated safety analyses to demonstrate compliance with the consequence and likelihood performance requirements of 10 CFR 70.61.<sup>8</sup>

### *Adequate Protection Determinations*

The Commission has used qualitatively considered factors or other policy considerations in determining whether a regulatory action rises to the level of adequate protection. The concept of adequate protection is limited to considerations of public health and safety and common defense and security as discussed in SECY-12-0110, "Consideration of Economic Consequences within the U.S. Nuclear Regulatory Commission's Regulatory Framework," and, as mentioned in the January 10, 2014, Commission meeting on Near-Term Task Force Recommendation 1, is a level that is determined at the discretion of the Commission.<sup>9</sup> The only quantitative measures that are somewhat related to the consideration of adequate protection for power reactors is the safety goal surrogates (i.e., core damage frequency and containment failure probability) to the quantitative health objectives. Specifically, the NRC's Regulatory Analysis Guidelines provide guidance that the NRC should make a determination regarding adequate protection or compliance for a change in core damage frequency (CDF) greater than  $1 \times 10^{-4}$  per reactor year accompanied with a conditional containment failure probability greater than 0.1. However, a change in CDF cannot be applied in evaluating all potential regulatory

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<sup>7</sup> NRC Regulatory Guide 1.174, Rev. 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," p.6 (ADAMS Accession No. ML100910006).

<sup>8</sup> See 10 CFR 70.61 and NUREG-1520 Rev. 1 "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility," May 2010.

<sup>9</sup> This and other NRC webcasts are available on the NRC public website at <http://video.nrc.gov/>.

actions (e.g., spent fuel pools and materials), and in some cases, determining the change in CDF would be difficult (e.g., safeguards).

### *Cost-Justified Substantial Safety Enhancement (Backfitting)*

If the goal of a proposed backfitting action is to provide an additional level of safety or security, above and beyond adequate protection, then the NRC must conduct a backfit analysis which includes the consideration of costs. The NRC's backfit rule for power reactors (10 CFR 50.109) states, in part, the following:

[T]he Commission shall require the backfitting of a facility only when it determines ... that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit and that the direct and indirect costs of implementation for that facility are justified in view of this increased protection.<sup>10</sup>

NUREG-1409, "Backfitting Guidelines," (July 1990), provides for the qualitative consideration of factors in the development of a backfit analysis. NUREG-1409 states that "the backfit rule does not require a strict quantitative showing that benefits exceed costs."<sup>11</sup> It further states the following:

Qualitative factors can be considered. Many of the factors to be addressed in the analysis may not be easily quantified, and the backfit rule permits consideration of other relevant and material factors.<sup>12</sup>

The qualitative consideration of factors in NRC regulatory analyses and backfit analyses is consistent with the Guidelines and the practices of other Federal agencies.

### Qualitative Consideration of Factors in Other Federal and International Agencies

President Clinton issued Executive Order (E.O.) 12866, "Regulatory Planning and Review," in September 1993.<sup>13</sup> E.O. 12866 directed Federal executive agencies to assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating.<sup>14</sup> Section 1(a) of E.O. 12866 states the following:

Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures

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<sup>10</sup> 10 CFR 50.109(a)(3)

<sup>11</sup> NUREG-1409, Section 2.1.3(1)(b), p.5

<sup>12</sup> Id.

<sup>13</sup> E.O. 12866 is available on the White House's Web site at [http://www.whitehouse.gov/omb/inforeg\\_riaguide/](http://www.whitehouse.gov/omb/inforeg_riaguide/).

<sup>14</sup> In February 2002, President George W. Bush issued E.O. 13258, which reaffirms and supports E.O. 12866. In January 2007, he issued E.O. 13422, which reaffirms and supports E.O. 12866. In January 2011, President Obama issued E.O. 13563, which reaffirms and supports E.O. 12866. E.O. 13563 states the following:

Our regulatory system...must take into account benefits and costs, both quantitative and qualitative.... [E]ach agency is directed to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. Where appropriate and permitted by law, each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify.

of costs and benefits that are difficult to quantify but nevertheless essential to consider.<sup>15</sup>

The Office of Management and Budget (OMB) published regulatory analysis guidance in Circular A-4, "Regulatory Guidance," which it published on September 17, 2003. Circular A-4 states that a "good regulatory analysis include(s)...an evaluation of the benefits and costs—quantitative and qualitative." Circular A-4 further states the following:

With this information, [the staff] should be able to assess quantitatively the benefits and costs of the proposed rule and its alternatives. A complete regulatory analysis includes a discussion of non-quantified, as well as quantified benefits and costs. A non-quantified outcome is a benefit or cost that has not been quantified or monetized in the analysis. When there are important non-monetary values at stake, [the staff] should also identify them in [the staff's] analysis so policymakers can compare them with the monetary benefits and costs. When [the staff's] analysis is complete, [the staff] should present a summary of the benefit and cost estimates for each alternative, including the qualitative and non-monetized factors affected by the rule, so that readers can evaluate them.<sup>16</sup>

The OMB Office of Information and Regulatory Affairs (OIRA) has noted that many agency "major rules have important nonquantified benefits and costs that may have been a key factor in an agency's decision to select a particular approach."<sup>17</sup> Enclosure 2 lists those rules reviewed by OMB from October 1, 2011, through September 30, 2012.

The OMB OIRA has published a primer<sup>18</sup> to assist agencies in developing regulatory analyses. The primer explains how Federal executive agencies should address benefits and costs that are difficult to quantify. It states, in part, the following:

*Benefits and costs that are difficult to quantify.* If the agency cannot quantify a benefit or cost, the agency should explain why and present any available quantitative information. For example, the agency may not be able to quantify the number of individuals exposed to a risk but may be able to quantify the magnitude of the risk to those who are exposed. The agency should also provide a detailed qualitative description of any unquantified effects, such as ecological gains, improvements in quality of life, and aesthetic beauty. The agency should provide a discussion of the strengths and limitations of the qualitative information.<sup>19</sup>

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<sup>15</sup> 58 FR 51735; October 4, 1993.

<sup>16</sup> OMB Circular A-4 (ADAMS Accession No. ML11231A834), p. 3.

<sup>17</sup> See the OIRA report entitled, "2013 Draft Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act," issued April 2013, p. 17. This report is available at [http://www.whitehouse.gov/omb/inforeg/regpol\\_reports\\_congress/](http://www.whitehouse.gov/omb/inforeg/regpol_reports_congress/).

<sup>18</sup> See the OMB OIRA primer entitled, "Regulatory Impact Analysis: A Primer," which is available at [http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4\\_regulatory-impact-analysis-a-primer.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf).

<sup>19</sup> OMB OIRA primer, p. 13.

In summarizing the regulatory analysis, the primer instructs NRC staff to rank qualitative impacts, which should be categorized or ranked “in terms of their importance (e.g., certainty, likely magnitude, and reversibility).”<sup>20</sup> The regulatory analysis should also “distinguish the effects that are likely to be significant enough to warrant serious consideration by decisionmakers from those that are likely to be minor.”<sup>21</sup>

The NRC’s established regulatory review procedures, provided in the Guidelines and other related guidance documents, support qualitative evaluations consistent with the provisions of E.O. 12866. Furthermore, the NRC staff has voluntarily complied with Circular A-4 since its issuance. Therefore, the NRC’s regulatory analysis process, particularly the qualitative consideration of factors, is consistent with those agencies subject to E.O. 12866.<sup>22</sup>

The International Atomic Energy Agency and the Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency (NEA) provide little direct guidance on qualitative consideration of factors in cost-benefit analyses. The OECD/NEA report entitled “Methodologies for Assessing the Economic Consequences of Nuclear Reactor Accidents,” dated April 25, 2000,<sup>23</sup> provided methodologies and techniques to quantify the economic effects of nuclear reactor accidents and suggested uses of the methodologies. This report, however, also discusses the instances when one cannot quantify a factor and emphasizes the importance of qualitative considerations.

Enclosure 2 further discusses techniques used by other Federal agencies and international organizations to qualitatively consider factors in cost-benefit analysis.

#### DISCUSSION:

Based on the availability of quantitative information, four scenarios emerge that involve the qualitative consideration of factors within a cost-benefit analysis for a regulatory analysis and backfit analysis. The four scenarios are outlined as follows:

- Scenario A: Benefits cannot be quantified and are presented only qualitatively. The costs are quantified. This scenario has applied to security-related regulatory actions and nonpower reactor regulatory actions.
- Scenario B: Some benefits can be quantified. Costs are quantified. The net benefit of the quantitative analysis is positive, and the NRC staff’s qualitative consideration of those factors that cannot be quantitatively evaluated, strengthen the staff’s cost-benefit justification.
- Scenario C: Some benefits can be quantified. Costs are quantified. The net benefit of the quantitative analysis is negative; however, the NRC staff relies upon its qualitative consideration of those factors that cannot be quantitatively evaluated to otherwise

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<sup>20</sup> Id., p. 16.

<sup>21</sup> Id.

<sup>22</sup> Section 3(b) of E.O. 18266 excludes “independent regulatory agencies” from its definition of the term “agency” (58 FR 51737; October 4, 1993).

<sup>23</sup> The OECD/NEA report is available at [10.1787/9789264181472-en](https://www.oecd.org/energy/10.1787/9789264181472-en).



support the action. In this scenario, the staff qualitatively considers those factors in relation to the quantitative measures and makes a recommendation based on that analysis. This was the scenario for the regulatory analysis and backfit analysis in SECY-12-0157.

- Scenario D: Some benefits can be quantified. Costs are quantified. The NRC staff identifies those factors that it qualitatively considers; however, the staff does not consider them in the quantitative analysis and does not make a recommendation in regard to those factors. The staff relies on the Commission to qualitatively consider those factors that cannot be quantitatively evaluated. In this scenario, those factors that cannot be quantitatively evaluated are normally minor considerations and thus, not significant enough to make a change in the recommendation.

The qualitative consideration of factors in regulatory decisionmaking is important to the overall understanding and discussion of the impacts of a regulatory action. This consideration should be consistent with the Commission's 1995 Probabilistic Risk Assessment (PRA) Policy Statement and Regulatory Guide 1.174. Such considerations are also aligned with the practices of other Federal agencies and international bodies. Thus, the current framework for the qualitative consideration of factors is satisfactory and forms the basis for the staff's recommendation, recognizing that the staff would be improving the presentation of qualitative consideration of factors in regulatory analyses and backfit analyses and making the qualitative consideration of factors more reflective of Commission Policy. Enclosure 3 describes some of these methods and includes a discussion of threshold analyses, bounding analysis, cost-effectiveness analysis, internal rate of return, and qualitative assessment supplemented by decision analysis tools.

The current framework for the qualitative consideration of factors within regulatory analyses and backfitting analyses has been working to inform NRC decisionmakers about the whole range of information that is pertinent to the decision. However, because of lack of specific guidance on the qualitative consideration of factors, the perception is that such qualitative evaluation can be arbitrarily weighted against the cost-benefit quantitative assessment to arrive at a recommendation that is not predictable or consistent. In other words, would different NRC staff at a different time, given the same information and conditions, come to a different assessment or qualitative weighting of those factors to arrive at a different recommendation? Although the current guidance on the qualitative consideration of factors provides flexibility to the analyst, such that the right factors and the right assessment tools can be chosen for the specific information available and the specific decision to be made, this flexibility may not foster consistency in analysis outcomes and result in a perceived negative effect on regulatory stability. The staff finds that developing guidance clarifying the potential tools available to analysts for the qualitative evaluation of factors would enhance the clarity and consistency of the regulatory process. Similarly, the staff finds that developing guidance on how staff should document the qualitative consideration of factors for a given regulatory action, particularly when such factors are compared with the quantitative costs of such action, would improve transparency of the NRC's decisions.

### *Staff's Proposal*

The staff proposes updating cost-benefit guidance, including the Guidelines, to include a set of methods that could be used for the qualitative consideration of factors within a cost-benefit analysis for regulatory analyses and backfit analyses. The revised Guidelines would provide methods to assist the staff in developing the rationale of how the staff's recommendation

considered quantitative analysis with the qualitative consideration of those factors that cannot be quantitatively evaluated, where practical. These methods will be consistent with the PRA Policy Statement through Regulatory Guide 1.174. Part of the rationale would include describing the qualitative evaluation of such factors and the significance of each factor, and how they contribute to the integrated decisionmaking process. The staff would develop and formalize these methods consistent with its plans to update the agency's cost-benefit guidance (i.e., SECY-14-0002). Additionally, the guidance revision would preserve emphasis that quantifying estimates of benefits and costs are preferable to qualitative descriptions of benefits and costs. The revised guidance would also include information regarding how and when to apply the methodologies (see Enclosure 3) and how the results of the analyses would be used to inform decisions, so that the tools would be applied consistently. Upon completion, the staff will submit the updated guidance document to the Commission.

The advantages for this approach include:

- establishes a systematic process for the qualitative consideration of factors that cannot be quantitatively evaluated;
- increases transparency of how the NRC staff's recommendation qualitatively considered such factors in relation to the quantitative analysis; and
- increases consistency across business lines in regard to the qualitative consideration of factors for regulatory analyses and backfit analyses.

The disadvantages for this approach include:

- increases NRC staff resources for each regulatory analysis and backfit analysis given the more robust description of qualitative considerations;
- increases staff resources to update the cost-benefit analysis guidance to include a set of methods that could be used for the qualitative consideration of factors; and
- the qualitative consideration of factors remains subjective and may imply objectivity by formalizing the process.

#### RECOMMENDATION:

The NRC staff recommends that the Commission approve the staff's plans for updating guidance regarding qualitatively considering factors in regulatory analyses and backfit analyses. These updates would be implemented in accordance with the staff's plans for holistically updating cost-benefit guidance found in SECY-14-0002.

#### RESOURCE IMPLICATIONS:

Resources are currently included in the fiscal year (FY) 2014 Current Estimate and the FY 2015 Congressional Budget Justification, to update cost-benefit guidance to include a set of methods that could be used for the qualitative consideration of factors within a cost-benefit analysis for regulatory analyses and backfit analyses. A detailed breakdown of resources by business line

and preliminary estimates of resources for future years are provided in Enclosure 4. Resources beyond FY 2016 will be addressed during the Planning, Budgeting, and Performance Management process.

COORDINATION:

The Office of the General Counsel has reviewed this Commission paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objection.

*Interactions with the Advisory Committee on Reactor Safeguards*

The NRC staff has plans to discuss the qualitative consideration of factors in the development of regulatory analyses and backfit analyses with the Advisory Committee on Reactor Safeguards in the Fall of 2014.

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Enclosures:

1. List of Regulatory Actions That Rely Upon the Qualitative Consideration of Factors
2. The Qualitative Consideration of Factors by External Organizations
3. Evaluation Techniques for Benefits and Costs That Are Difficult To Quantify
4. Resources Estimates

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