NRC INSPECTION MANUAL

FCSS

MANUAL CHAPTER FCOP - BASIS DOCUMENT

FUEL CYCLE OVERSIGHT PROCESS
BASIS DOCUMENT

Field Code Changed

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TABLE OF CONTENTS

0XXX-01 PURPOSE 1

0XXX-02 OBJECTIVES 1

0XXX-03 APPLICABILITY 1

0XXX-04 DEFINITIONS 2

0XXX-05 RESPONSIBILITIES AND AUTHORITIES 5

0XXX-06 GENERAL DISCUSSION 5

06.01 Introduction 5

06.02 Background 6

06.03 Oversight Framework ..... 7~~6~~

06.04 Cornerstones within the Safety and Security Strategic Performance Areas ..... 9~~8~~

06.05 Performance Indicators ..... 13~~12~~

06.06 Cross-Cutting Issues, Substantive Cross-Cutting Issues, and Safety Culture Oversight ..... 13~~12~~

06.07 Risk-Informed Scale ..... 13~~12~~

0XXX-07 ACRONYMS AND REFERENCES ..... 14~~13~~

07.01 Acronyms ..... 14~~13~~

07.02 References ..... 15~~14~~

Exhibit 1 - Fuel Cycle Oversight Process 1

Exhibit 2 - Oversight Framework 1

Revision History for IMC-FCOP-Basis Document 1

Attachment 1 – Technical Basis for the Inspection Program 1
Attachment 2 – Technical Basis for the Significance Determination Process (Later - Phase 2) 1
Attachment 3 – Technical Basis for Performance Indicators (Later - 2010) 1

Attachment 4 – Technical Basis for the Assessment Program (Later – Phase 2) 1
Attachment 5 – Technical Basis for the Enforcement Policy (Later – Phase 2) 1

Appendix A. Chemical Process Safety Significance Determination Process Technical Basis (Later)……1
Appendix B. Criticality Safety Significance Determination Process Technical Basis (Later)……1
Appendix C. Public Radiation Safety Significance Determination Process Technical Basis (Later) ……1
Appendix D. Occupational Radiation Safety Significance Determination Process Technical Basis (Later) ……1
Appendix E. Emergency Preparedness Significance Determination Process Technical Basis……1
Appendix F. Information Security Significance Determination Process Technical Basis (Later - 2010) ……1
Appendix G. Physical Security Significance Determination Process Technical Basis (Later - 2010) ……1
Appendix H. Material Control and Accounting Significance Determination Process Technical Basis (Later - 2010)……1

General comment: The basis document appears to describe what industry understands to be the basis and plans for revising the oversight process but it does not describe how the revised oversight process will be implemented. We suggest that more description and context be provided in the introduction section 06.01 and the background section 06.02. This is particularly important since the revised oversight process has been characterized by NRC as a "voluntary" process. ~~b~~ yet the enforcement policy and process will be modified to reflect the revised oversight process, thereby implying a less than voluntary approach. Should these new expectations be codified through a public rulemaking process?

0XXX-01 PURPOSE

To describe the basis for significant decisions reached by the U.S. Nuclear Regulatory Commission (NRC) staff during the development and implementation of the revised Fuel Cycle Oversight Process (FCOP) for operating nuclear fuel cycle facilities. This document serves as the source information for all applicable program documents such as Inspection Manual Chapters (IMCs) that describe the inspection program, significance determination process, assessment program. The oversight program is structured to allow for future inclusion of a performance indicator (PI) program.[1]

0XXX-02 OBJECTIVES

02.01 To discuss significant developmental steps and decisions reached.

02.02 To describe in general how the processes work and their basis.

02.03 To summarize the history of the development of and reasons for significant changes made to the oversight processes and programs.

0XXX-03 APPLICABILITY

The fuel cycle inspection program applies to operating fuel cycle facilities licensed by the NRC including nuclear fuel fabrication and assembly facilities, uranium enrichment plants, and uranium conversion plants. (Note: As the safety and safeguards inspection program is applied to facilities certified under 10 CFR Part 76, "license" shall read as "certificate," and "licensee" shall read as "certificate holder" for such facilities.)

1 Performance indicators which may serve as inputs to the assessment process are under consideration and may be added to the Fuel Cycle Oversight Process in the future.

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Inspection and assessment activities for facilities undergoing construction, pre-operation, startup, major modifications, or having ceased operations in preparation for decommissioning should be handled on a case-by-case basis. Fuel cycle facilities in non-operating status generally do not pose the same levels of risk as operating facilities. Certain inspection procedures (IPs) may not be applicable in these cases, and others may need to be adjusted to the given situation to reflect the actual level of risk attached to each situation.

Facilities with approved Decommissioning Plans, or for which project management responsibility has been transferred out of the Division of Fuel Cycle Safety and Safeguards (FCSS), are not addressed in this chapter.

0XXX-04 DEFINITIONS

04.01 Action Matrix. A highly structured and graded approach for defining NRC actions for licensee performance issues. The action matrix is the central component of the assessment program in its attempt to produce assessment results that are objective, predictable and transparent.

04.02 Assessment Program. A comprehensive risk-informed and performance-based licensee performance assessment process that attempts to produce objective, predictable and transparent results. The program uses inputs from the baseline inspection program including inspection results processed through the significance determination process. In the future, the assessment program may be amended to use inputs from a performance indicator program.

04.03 Baseline Inspection Program. The normal inspection program performed at all fuel cycle facilities. The program will focus on facility activities that are most risk significant and will assess licensee corrective action program performance.

04.04 Cornerstone. A central element of the FCOP which is essential for the safe and secure operation of the fuel cycle facility. Cornerstones are grouped under the categories of facility operations safety, radiological materials safety, and security.

04.05 Cross-Cutting Area[2]. Fundamental performance attributes that extend across all of the ROP cornerstones of safety. These areas are human performance (HU), problem identification and resolution (PI&R), and safety conscious work environment (SCWE).

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2 Development of Substantive Cross-Cutting Issues for the Revised Fuel Cycle Oversight Process will be implemented in the future.

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04.06 Cross-Cutting Aspect[2]. A performance characteristic that is the most significant contributor to a performance deficiency.

04.07 Cross-Cutting Theme[2]. Multiple inspection findings (i.e., four or more) that are assigned the same cross-cutting aspect.

Suggest adding a definition of "Cross-cutting Component" to be consistent with the "Assessment Program" Inspection Manual. More importantly, 4 terms related to "cross-cutting" may result in unnecessary complexity and simplification of the program element should be considered.

04.08 Fuel Cycle Facilities. Facilities that are licensed (or certified) and regulated under Title 10 of the *Code of Federal Regulations* Parts 40, 70, and 76.

04.09 Objective. A desired program attribute in which decisions are based on factual information and uninfluenced by emotion, surmise, or personal prejudice and which should yield reproducible, transparent and predictable results.. Being objective is one of the five program goals of the FCOP used to evaluate its overall success and effectiveness.

04.10 Oversight Framework. A top-down hierarchical structured approach of oversight that includes the NRC's mission, strategic performance areas, cornerstones of safety and security and cross-cutting areas.

04.11 Performance-Based. A performance-based requirement relies upon measurable outcomes to be met, but provides more flexibility to the licensee as to the means of meeting those outcomes. Performance-based activities at the NRC focus on identifying measurable parameters of performance that ensure adequate safety margin and encourage the licensees to improve safety without regulatory intervention.

04.12 Performance Deficiency. **(LATER)Definition is needed sooner rather than later**

04.13 Performance Indicator. **(RESERVED)**

04.14 Predictable. A desired program attribute in which more than one individual can independently follow the same defined process and arrive at the same conclusion in a consistent manner (i.e., repeatable). Being predictable is one of the five program goals of the FCOP used to evaluate its overall success and effectiveness.

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04.15 Reactive Inspection. An inspection to examine the circumstances surrounding an operational problem or event occurring at a fuel cycle facility.

04.16 Risk-Informed. An approach to decision-making in which risk insights are considered along with other factors (such as engineering judgment, safety limits, redundancy, and diversity) to better focus licensee and regulatory attention on issues commensurate with their importance to health and safety. Being risk-informed is one of the five program goals of the FCOP used to evaluate its overall success and effectiveness.

04.17 Risk Informed Scale. The risk-informed scale is a set of threshold values of fundamental risk parameters, such as probability and consequence values, that define a set of categories of increasing risk significance in the order: green, white, yellow, and red. Note: the risk informed scale or metric to be applied to FCFs warrants much decision in light of thei inherent risk and relative risks compared to reactors and the applicability and value of using the same color coded scale or something unique.

04.18 Safety-Conscious Work Environment (SCWE). An environment in which employees feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation and where such concerns are promptly reviewed, given the proper priority based on their potential safety significance, and appropriately resolved with timely feedback to employees.

04.19 Safety Culture. The assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, fuel cycle facility safety and security issues receive the attention warranted by their significance. There is no regulatory basis for this not even a policy statement at this time, therefore this is premature

04.20 Significant Determination Process. The process used to evaluate inspection findings to determine their safety- and security-significance. This involves assessing how much the inspection findings increase the risk of nuclear operations – this sentence warrants clarification. This process is described in IMC-RFCOP-SDP.

04.21 Strategic Goals. The agency's core functions which are to ensure adequate protection of public health and safety (i.e., safety), and ensure adequate protection in the secure use and management of radioactive materials (i.e., security).

04.22 Strategic Performance Areas. Fundamental areas of the oversight framework which include safety and security that best reflect the NRC's mission.

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04.23 Substantive Cross-Cutting Issue (SSCI)[3]. An SCCI is a cross-cutting theme that has been identified in PI&R or HU, about which the NRC staff has a concern with the licensee's scope of efforts or progress in addressing the cross-cutting theme. An SSCI in the SCWE cross-cutting area, if there is a finding with a documented cross-cutting aspect in the area, or the licensee has received a chilling effect letter, or the licensee has received correspondence from the NRC which transmitted an enforcement action with a Severity Level of I, II, or III, and which involved discrimination, or a confirmatory order which involved discrimination, and the Agency has a concern with the licensee's scope of efforts or progress in addressing the SCWE concern is a SCCI.

04.24 Supplemental Inspection. An inspection that diagnoses the identified problems and issues beyond the baseline inspection. This inspection will be planned in response to issues that result in crossing a threshold of the Action Matrix. The scope of the supplemental inspection becomes deeper and broader as the safety-significance or security-significance of the performance issues increase.

04.25 Transparent. A desired program attribute in which makes program elements and assessment results more understandable and available to all stakeholders, thus supporting the NRC's openness objective. Being transparent is one of the five program goals of the FCOP used to evaluate its overall success and effectiveness.

0XXX-05 RESPONSIBILITIES AND AUTHORITIES

None stated

0XXX-06 GENERAL DISCUSSION

06.01 Introduction

On [DATE-(later)], the NRC implemented a revised FCOP at all operating nuclear fuel cycle facilities. The objectives of the staff in developing the various components of this revised oversight process were (1) to provide tools for inspecting and assessing licensee performance in a manner that used the risk insights of licensees' Integrated Safety Analyses (ISAs) and Safety Analysis Reports (SARs), and (2) to develop a process that was more risk-informed and performance based, with a goal of being more objective, predictable, transparent,

3 Development of Substantive Cross-Cutting Issues for the Revised Fuel Cycle Oversight Process will be implemented in the future.

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and understandable than the previous oversight processes. The revised FCOP was also developed to meet the two agency Strategic Goals to: (1) ensure adequate protection of public health and safety and the environment, and (2) ensure adequate protection in the secure use and management of radioactive materials. The FCOP was also developed to meet the Organizational Excellence Objectives of Openness, Effectiveness, and Operational Excellence in support of the Strategic Goals.

In developing the revised FCOP, many aspects of the previous oversight process, such as the inspection program, assessment process, and enforcement policy were revised to meet the Strategic Plan Objectives and Goals and to be better integrated and streamlined. Additionally, several revised oversight processes were developed such as the fuel cycle significance determination process (FCSDP) for determining the significance of inspection findings. An overview of the FCOP and how the individual processes interact is shown in Exhibit 1. Exhibit 1 includes a description of a Performance Indicator program. The development of the Performance Indicator program is planned to start in 2010. Suggest deleting this last sentence as it is premature to set a date. As the footnote on page 1 accurately states, performance indicators **may** be added in the future but no such decision has been made to date.

Additional detail regarding the development and basis for each of the individual oversight processes is included as separate attachments to this document**.** Attachment 1 describes the Inspection Program and discusses the concepts of the Baseline and Supplemental Inspections. Attachment 2 discusses the basis for the different fuel cycle significance determination processes that have been or will be developed to evaluate the safety significance of inspection findings. Attachment 3 discusses how the Assessment Program was developed to identify the appropriate NRC actions to take based on the inspection findings generated. Attachment 4 discusses the significant changes made to the Enforcement Policy to support the FCOP. In the future, if a performance indicator program is developed and finalized, the basis for selecting PIs, the selection of PI thresholds and the benchmarking of the PIs will be described in a separate attachment.
(see corrections to the Attachment numbers)

06.02 Background

Since 1999, the NRC has undertaken several initiatives to examine and improve the NRC's oversight process for fuel cycle facilities, including those licensed or certified under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 40[4], Part 70[5], and Part 76[6]. Although previous efforts resulted in some revisions to

4 10 CFR Part 40 - Domestic Licensing of Source Material
5 10 CFR Part 70 - Domestic Licensing of Special Nuclear Material

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inspection and assessment procedures, the NRC oversight could be further improved by (1) more fully incorporating into inspection and assessment the risk insights of licensees' integrated safety analyses. Integrated safety analyses establish safety controls based on analyses of potential hazards at a facility and (2) enhancing the assessment process to make it more objective, predictable and transparent.

To meet the objective of developing an oversight process with an improved degree of transparency, predictability, objectivity and consistency, using risk-informed and performance-based tools, the staff undertook a comprehensive effort to develop a revised Fuel Cycle Oversight Process (FCOP). The staff's efforts were consistent with the recent guidance in this area, notably the guidance provided in the Staff Requirements Memoranda dated April 3, 2008, and February 17, 2009 (Agency wide Documents Access and Management System [ADAMS] Accession Nos. ML0809404390 and ML0904900320), and recommendations made by the Office of Inspector General report OIG 07-A-06 (ADAMS ML070100282).

06.03 Oversight Framework

The staff used a top-down, hierarchical approach to develop the concept for a revised oversight process that addresses the agency's regulatory principles. This approach started with a desired outcome, identified performance goals to achieve this outcome, and then identified specific objectives and information needs to meet each performance goal. The Oversight Framework is shown in Exhibit 2.

This oversight framework starts at the highest level, with the NRC's overall mission to ensure that nuclear fuel cycle facilities are operated in a manner that provides adequate protection of public health and safety and the environment and ensures adequate protection in the secure use and management of radioactive materials. The staff then identified those aspects of licensee performance that are important to the mission and therefore merit regulatory oversight. The February 2008 NRC Strategic Plan (NUREG-1614, Vol. 4) identifies the performance goals to be met for ensuring nuclear fuel cycle facility safety and security and include the following:

- Prevent the occurrence of any inadvertent criticality events
- Prevent the occurrence of any acute radiation exposures resulting in fatalities
- Prevent the occurrence of any releases of radioactive materials that result in significant radiation exposures

6 10 CFR Part 76 - Certification of Gaseous Diffusion Plants

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- Prevent the occurrence of any releases of radioactive materials that cause significant adverse environmental impacts

- Prevent any instances where licensed radioactive materials are used domestically in a manner hostile to the United States

In addition to the radiation-related goals above, because of the hazardous chemicals at fuel cycle facilities, and through a memorandum of understanding with the Occupational Safety and Health Administration (OSHA), NRC regulations require licensees to control the potential impacts on workers and the public of certain chemicals used at their facilities that are associated with processes involving radioactive materials.

These performance goals reflect those areas of licensee performance for which the NRC has regulatory responsibility in support of the overall agency mission. These performance goals were represented in the oversight framework structure as the strategic performance areas of Safety and Security which form the second level of the oversight framework – the contribution of and value added by this "second level" of oversight is unclear and warrants further discussion and explanation.. The Safety strategic performance area was divided into facility operational safety and radiological materials safety in order to make a clear distinction between facility and radiological safety relative to their distinct cornerstones.

With a risk-informed perspective, the staff then identified the most important elements, or cornerstones in each of these key performance areas that form the foundation for meeting the overall agency mission which form the 3rd level of the framework. These cornerstones serve as the fundamental building blocks for the revised FCOP, and acceptable licensee performance in these cornerstones provides reasonable assurance that the overall mission of adequate protection of public health and safety would be met.

For the fourth level of the oversight framework, cross-cutting areas were added. Cross-cutting areas include: (1) safety conscious work environment; (2) human performance; and (3) problem identification and resolution. A detailed discussion of cross-cutting areas is provided in Attachment 3 of this document**.** There is no detailed discussion of cross-cutting issues in any of the attachments.

Once the oversight framework was established, the staff developed the defining principles that formed the strategy and rules (the term "rules" warrantes clarification since there is no rulemaking underway associated with this activity) for the further development of the details of the revised FCOP. These defining principles established the relationship between elements of the oversight processes, such as enforcement and inspection, and include:

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- There will be a risk-informed baseline inspection program that establishes the minimum regulatory interaction for all licensees.

- Thresholds ~~can be set~~ have been established~~sihed~~ and are in place today for licensee safety performance, above which increased NRC interaction (including enforcement) would be warranted.

- Adequate assurance of licensee performance at the cornerstone level requires assessment of inspection findings.

- The results of inspections used to assess a cornerstone will have risk-informed thresholds, when possible.

- Enforcement actions taken (e.g., the number of cited violations, the amount of a civil penalty) will not be an input into the assessment process. When? Ever? Intent is not clear. However, the performance deficiency that led to the enforcement action will continue to be considered in the assessment.

- Assessment process results ~~might be used to modify~~ will be considered during enforcement actions. (Assessment results however, would not affect the determination of violation severity level). Clarification between use of the terms "process" and "results" needs to be clarified. Do not agree, the assessment process should not be used to modify the enforcement actions. Enforcement actions should be based on the severity of the identified concern. The assessment process will be used to determine the significance, once this has been determined enforcement would be appropriate for this level of significance.

- Guidelines will establish criteria for identifying and responding to unacceptable licensee performance.

It is important to note that the intent of these defining principles as a goal was to result in an oversight process that would provide adequate margin in the assessment of licensee performance so that appropriate licensee and NRC actions could be taken before unacceptable performance occurred. On face value, this last sentence appears to be in conflict with the last bullet.

06.04 Cornerstones within the Safety and Security Strategic Performance Areas

The staff performed the following for each cornerstone in an effort to:

- provide a general description of the cornerstone;

- identify the objective and scope of the cornerstone;

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For the Safety strategic performance area, the chosen cornerstones of facility operational safety were: (1) emergency preparedness; (2) chemical process safety; and (3) criticality safety. The chosen cornerstones of radiological material safety were: (1) public radiation safety; and (2) occupational radiation safety. The chosen cornerstones for the Security performance area were: ~~(1) information security; (2)~~ physical security; and ~~(3)~~ material control and accounting. These cornerstones were selected because NRC staff concluded that they were the key safety and security elements at fuel cycle facilities and that meeting these would meet the cornerstone's objectives and would provide reasonable assurance that the NRC meets the Strategic Plan goals. The NRC also concluded that these areas were best suited to make the process more understandable to stakeholders. Industry has not necessarily agreed that this is the best set of cornerstones. More discussion is needed, for example, the ROP does not use an information security cornerstone.

In addition, Subpart H of 10 CFR Part 70 requires that Integrated Safety Analyses (ISAs) consider ~~emergency preparedness~~ emergency preparedness is not part of the ISDA requirements, chemical process safety, public and worker radiation safety, fire protection, and criticality safety. Teams that developed ISAs were required by 10 CFR Part 70 to include on ISA development teams expertise in these areas. Licensees were required to include these safety areas in the development of Items Relied on for Safety (IROFS) and management measures ~~and were required to develop emergency capability~~ see previous comment. Licensees implemented controls in these areas, and the NRC established inspections of licensee activities in these areas. Thus, these cornerstones represent how licensees have established their safety and security programs and reflect how the NRC inspects licensees.

A general description of each cornerstone is provided below.

Safety Strategic Performance Area

Facility Operational Safety

- Emergency Preparedness – verifies the licensee's ability to respond to events that could threaten the ~~facility to protect~~ workers, the public and the environment.

- Chemical Process Safety – ensures that chemical process upsets do not affect the safe handling of licensed materials and that workers, the public, and the environment are protected from hazardous chemicals produced from radioactive materials authorized by an NRC license or certificate.

- Criticality Safety – ensures that inadvertent nuclear criticality events are prevented.

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Radiological Materials Safety

- Public radiation safety - ensures the public and the environment are protected from unintended exposure to radioactive material that could adversely affect public health.

- Occupational radiation safety - ensures the protection of workers from unintended exposure to radioactive material that could adversely affect worker health.

Security Strategic Performance Area

- ~~Information security – prevents unauthorized disclosure of information by verifying the proper handling and control of both classified information and sensitive, unclassified information~~.

- Physical security – ensures that the special nuclear and other radioactive materials are protected from theft and diversion or radiological sabotage.

- Material Control and Accounting (MC&A) – ensures that the licensee knows the location, form, and amount of special nuclear material (SNM) under their control.

The objective for each cornerstone is provided below. (Note: that meeting the cornerstone objective is an important aspect of assessing licensee performance.)

Facility Operational Safety

Emergency Preparedness – The objective of this cornerstone is to ensure that emergency plan actions taken by the personnel responsible for emergency response ~~organization~~ would provide protection of the public health and safety during a radiological or chemical emergency. (Note – most FCFs doe not have an "organization" responsible for emergency response). Licensees ensure that the emergency plan would be implemented correctly by conducting drills and training. This would give reasonable assurance that the licensee can effectively protect the public health and safety in the event of an actual radiological emergency**.**

Chemical Process Safety - The objective of this cornerstone is to ensure adequate protection of workers, the public, and the environment from inadvertent exposure to hazardous chemicals produced from licensed material ~~as a result of routine fuel cycle facility operations~~. Licensees implement adequate measures to control hazardous chemicals that could adversely affect (?adversely affect – not clear what the goal is here. The concern is the release of or exposure to hazardous chemicals) radiological safety or could be released from the processing of licensed radioactive material. This would give

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reasonable assurance that the licensee can effectively protect workers, the public, and the environment from exposure to hazardous chemicals produced from licensed material.

Criticality Safety

The objective of this cornerstone is to ensure adequate protection of workers, and members of the public from inadvertent nuclear criticality accidents in licensed special nuclear material as a result of fuel cycle facility operations. Licensees implement and maintain adequate controls to prevent such accidents.

Radiological Materials Safety

Public Radiation Safety

The objective of this cornerstone is to ensure adequate protection of public health and safety from exposure to radioactive material released into the public domain as a result of upset conditions~~routine fuel cycle facility operations~~. These include the inadvertent releases ~~include routine~~ of gaseous and liquid radioactive effluent~~ discharges~~, ~~the inadvertent~~ release of solid contaminated materials, and the offsite transport of radioactive materials and wastes. Licensees can maintain public protection by meeting the applicable regulatory limits and "as low as is reasonably achievable" (ALARA) guidelines.

Occupational Radiation Safety

The objective of this cornerstone is to ensure adequate protection of worker health and safety from exposure to radiation and radioactive materials during routine fuel cycle facility operation. This exposure could come from poorly controlled or uncontrolled radiation areas or radioactive material that unnecessarily exposes workers. Licensees can maintain occupational worker protection by meeting applicable regulatory limits and ALARA guidelines.

Security Strategic Performance Area

~~Information Security~~

~~The objective of the information security cornerstone is to protect public health and safety, the common defense, and our national security. This is accomplished by assuring that regulated entities develop and maintain programs to protect classified, safeguards and sensitive, unclassified information from unauthorized disclosure.~~

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Physical Security

The objective of the physical protection cornerstone is to protect the public

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health and safety, and common defense and security. This is accomplished through the ~~licensing and periodic inspection of~~ licensee's physical protection systems and programs to assure effective protection of fuel cycle facilities and activities against radiological sabotage and theft and diversion of special nuclear materials.

Material Control and Accounting (MC&A).

The objective of this cornerstone is to ensure that the licensee's MC&A system adequately detects and protects against the loss, theft, or diversion of special nuclear material (SNM) that the licensee is authorized to possess, store, and utilize at its facility. If loss, theft, or diversion does occur, MC&A ensures that the licensee's MC&A system triggers timely detection, response, and recovery. For enrichment facilities MC&A also ensures that the licensee adequately detects against unauthorized production and/or unauthorized levels of enrichment of SNM.

06.05 Performance Indicators

(**RESERVED)**

06.06 Cross-Cutting Issues, Substantive Cross-Cutting Issues[7], and Safety Culture Oversight

In addition to identifying the cornerstones of safety, the staff also identified certain aspects of licensee performance that were seen as "cross-cutting" and potentially impacting more than one cornerstone. Aspects of licensee performance such as human performance, the establishment of a safety conscious work environment (SCWE), and the effectiveness of licensee problem identification and resolution (OI&R) programs, although not regulatory requirements or identified as specific cornerstones, are still important to meeting the agency safety mission and the safety culture at the licensee's facility. The staff concluded that these items generally manifest themselves as the root causes of performance problems (generality and may not be representative of actual root cause determinations in response to actual events). Adequate licensee performance in these cross-cutting areas will be assessed either explicitly in each cornerstone area or will be inferred through cornerstone performance results from inspection results.

These cross-cutting issues are discussed in further detail in the revised IMC 2604 Fuel Cycle Facility Assessment Program.

06.07 Risk-Informed Scale – It is assumed that this section is in the drafting stage as it lacks the technical basis referred to in paragraph one.

7 Development of Substantive Cross-Cutting Issues for the Revised Fuel Cycle Oversight Process will be implemented in the future.

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This section discusses the general technical basis for a scale of accident risk values to serve as thresholds defining risk significance categories ~~red, yellow, white, and green~~ delete or provide the risk approach for these colors in relation to the same colors for the ROP. , in decreasing order of risk. This scale of thresholds is to be used in the significance determination process for fuel cycle facility safety cornerstones related to Integrated Safety Analyses (ISA). Prior to being assessed, all items will have been determined to be a performance deficiency of greater than minor significance.

Risk involves the magnitude of both consequences and probabilities of accident events. The risk significance categories defined here use the scale of accident consequences already established in 10 CFR 70 Subpart H; namely, high and intermediate consequences to workers and the public. Criteria for the magnitude of radiological and chemical exposure that define these 'high' and 'intermediate' accident consequence categories are specified in sections 10 CFR 70.61(b) and (c). Criteria are specified for accidents involving radiological doses (including inadvertent nuclear criticalities), and for those involving chemical exposures.

The thresholds for risk significance categories (colors) are specified in terms of the risk metric, "change in probability", for both high and intermediate consequence events.. "Change in probability" is the product of the increase in frequency of an accident due to a deficiency or upset condition times the duration of this elevated frequency. Typically (but not necessarily), the risk changes by a factor of about 10 between.

0XXX-07 ACRONYMS AND REFERENCES

07.01 Acronyms

10 CFR	Title 10 of the *Code of Federal Regulations*
ADAMS	Agency-wide Document Access and Management System
ALARA	As Low As is Reasonably Achievable
FCOP	Fuel Cycle Oversight Process
FCSDP	Fuel Cycle Significance Determination Process
HU	Human Performance
IROFS	Item Relied On For Safety
IMC	Inspector Manual Chapter
ISA	Integrated Safety Analysis
MC&A	Material Control and Accounting
NRC	U.S. Nuclear Regulatory Commission
NMSS	Nuclear Material Safety and Safeguards, Office of
OIG	Office of the Inspector General
OSHA	Occupational Safety and Health Administration
PI	Performance Indicator

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PI&R	Problem Identification & Resolution
SAR	Safety Analysis Report
SCCI	Substantive Cross-Cutting Issue
SCWE	Safety Conscious Work Environment
SNM	Special Nuclear Material
SRM	Staff Requirements Memoranda

07.02 References

1. "Staff Requirements – Briefing on the State of NRC Technical Programs, 1:00 p.m., Monday, March 17, 2008, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," Staff Requirements Memorandum M080317B, April 3, 2008 (ADAMS Accession No. ML080940439).

2. "Staff Requirements – Briefing on Uranium Enrichment, 9:00 a.m. and 1:30 p.m., Thursday, February 5, 2009, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," Staff Requirements Memorandum M090205, February 17, 2009 (ADAMS Accession No. ML090490032).

3. "Memorandum Report: Audit of NRC's Regulation of Nuclear Fuel Cycle Facilities," OIG-07-A-06, January 10, 2007 (ADAMS Accession No. ML070100282).

4. USNRC, "U.S. Nuclear Regulatory Commission, Strategic Plan, Fiscal Years 2008 – 2013, NUREG-1614, Volume 4, February 2008.

5. "Memorandum of Understanding between the Nuclear Regulatory Commission and the Occupational Safety and Health Administration; Worker Protection at NRC-licensed Facilities," 53 Fed. Reg. 43950, October 31, 1988.

6. "Memorandum of Understanding With Respect to the Gaseous Diffusion Plants," 61 Fed. Reg. 40249, August 1, 1996.

7. Code of Federal Regulations, Title 10, Part 40, "Domestic Licensing of Source Material," U.S. Government Printing Office, Washington, DC.

8. Code of Federal Regulations, Title 10, Part 70, "Domestic Licensing of Special Nuclear Material," U.S. Government Printing Office, Washington, DC.

9. Code of Federal Regulations, Title 10, Part 76, "Certification of Gaseous Diffusion Plants," U.S. Government Printing Office, Washington, DC.

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10. U.S. Nuclear Regulatory Commission, "Risk-Informed Decision-Making for Nuclear Material and Waste Applications," Revision 1, February 2008 (ADAMS Accession No. ML080720238).

11. International Commission on Radiological Protection, "Protection from Potential Exposure: A Conceptual Framework," ICRP Publication 64, 1993.

12. United Kingdom Health and Safety Executive, Reducing Risks and Protecting People (www.hse.gov.uk-risk-theory-r2p2.pdf).

END

There are 12 documents that are in a "later" status. As such, it is difficult to comment on this basis document in an informed manner in their absence.

Exhibits:

1. Fuel Cycle Oversight Process
2. Oversight Framework – Cornerstones and Cross Cutting Areas

Attachments:

1. Technical Basis for the Inspection Program **(Later)**
2. Technical Basis for the Significance Determination Process **(Later)**
3. Technical Basis for the Assessment Program **(Later)**
4. Technical Basis of the Enforcement Policy **(Later)**

Appendices:

A. Chemical Process Safety Significance Determination Process Technical Basis **(Later)**
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D. Occupational Radiation Safety Significance Determination Process Technical Basis **(Later)**
E. Emergency Preparedness Significance Determination Process Technical Basis **(Later)**

~~F. Information Security Significance Determination Process Technical Basis **(Later)**~~
~~G.~~F Physical Security Significance Determination Process Technical Basis **(Later)**
~~H~~G. Material Control and Accounting Significance Determination Process

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Technical
Basis **(Later)**

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Exhibit 1

Fuel Cycle Facility Oversight Process

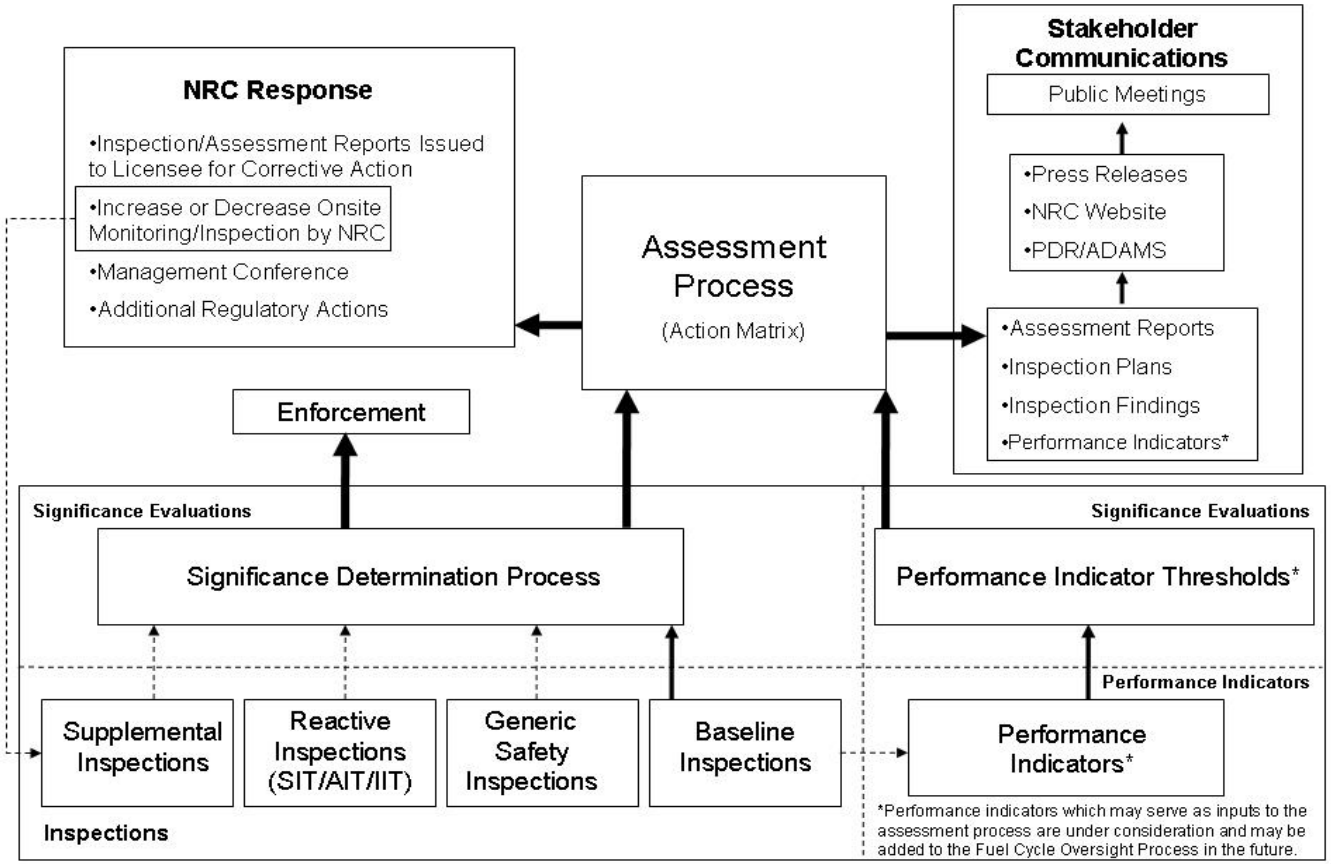
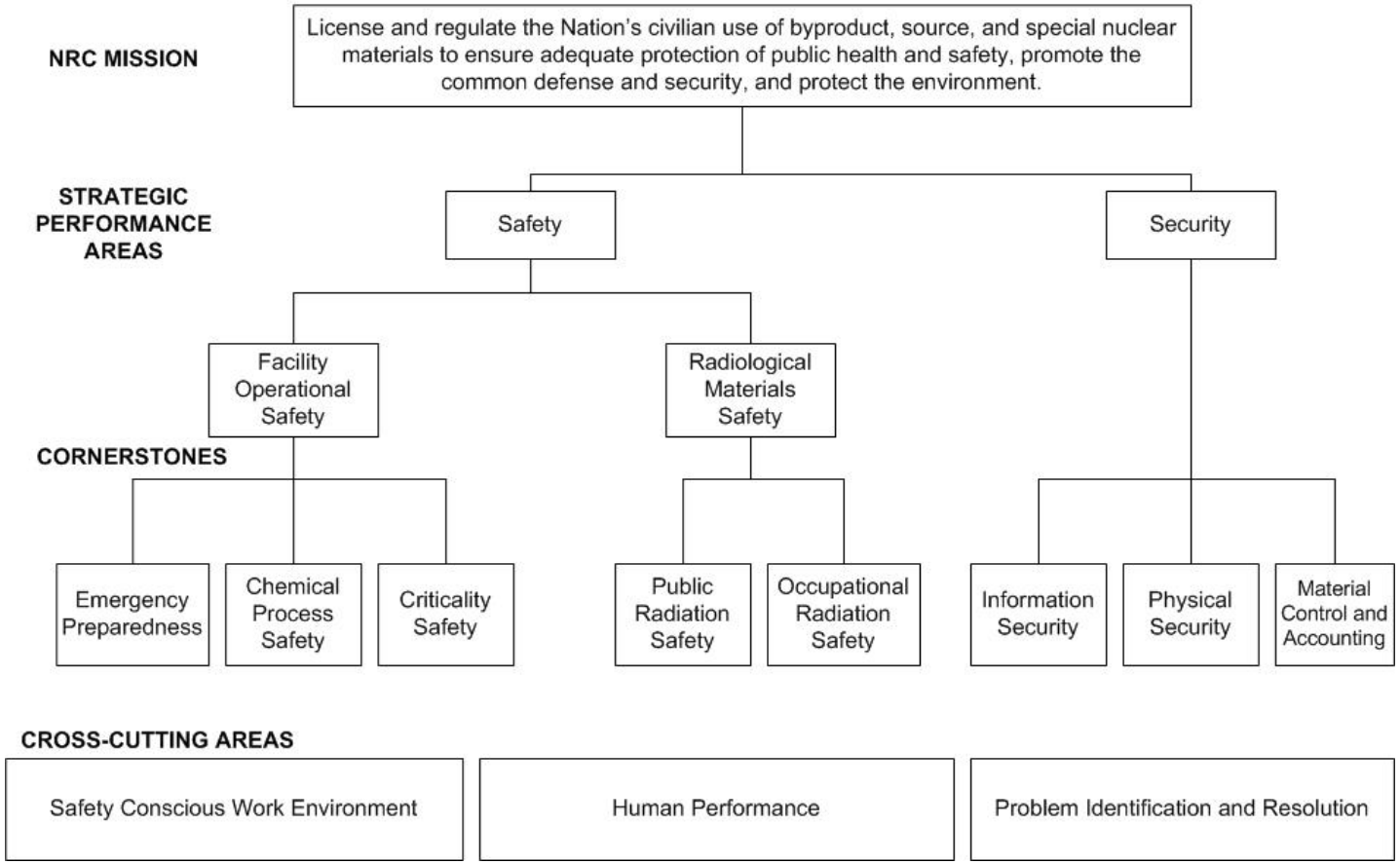


Exhibit 2

Oversight Framework – Cornerstones and Cross Cutting Areas



Revision History for IMC-FCOP-Basis Document

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number

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ATTACHMENTS

1	Technical Basis for the Inspection Program	(LATER)
2	Technical Basis for the Significance Determination Process	(LATER)
~~3~~	~~Technical Basis for Performance Indicators~~	~~(LATER)~~
~~4~~3	Technical Basis for the Assessment Program	(LATER)
~~5~~4	Technical Basis for the Enforcement Policy	(LATER)

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Appendix

A Chemical Process Safety Significance Determination Process Technical Basis **(LATER)**

B Criticality Safety Significance Determination Process Technical Basis **(LATER)**

C Public Radiation Safety Significance Determination Process Technical Basis **(LATER)**

D Occupational Radiation Safety Significance Determination Process Technical Basis **(LATER)**

E Emergency Preparedness Significance Determination Process Technical Basis **(LATER)**

~~**F** Information Security Significance Determination Process Technical Basis **(LATER)**~~

~~**G**~~**F** Physical Security Significance Determination Process Technical Basis **(LATER)**

~~**H**~~**G** Material Control and Accounting Significance Determination Process Technical Basis **(LATER)**

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