

# **NRC INSPECTION MANUAL**

IRAB

---

INSPECTION MANUAL CHAPTER 0310

---

ASPECTS WITHIN THE CROSS-CUTTING AREAS

Table of Contents

0310-01 PURPOSE..... 1

0310-02 OBJECTIVES ..... 1

0310-03 APPLICABILITY ..... 1

0310-04 DEFINITIONS..... 1

    04.01 Cross-Cutting Area..... 1

    04.02 Cross-Cutting Aspect ..... 1

    04.03 Nuclear Safety Culture ..... 1

0310-05 RESPONSIBILITIES AND AUTHORITIES..... 1

    05.01 Executive Director for Operations (EDO)..... 1

    05.02 Director, Office of Nuclear Reactor Regulation (NRR) ..... 1

    05.03 Regional Administrators ..... 1

    05.04 Director, Division of Inspection and Regional Support (NRR/DIRS)..... 2

    05.05 Director, Office of Nuclear Security and Incident Response (NSIR)..... 2

0310-06 CROSS-CUTTING AREAS AND ASPECTS ..... 2

    06.01 Human Performance (H) ..... 4

    06.02 Problem Identification and Resolution (P)..... 5

    06.03 Safety Conscious Work Environment (S) ..... 5

    06.04 Supplemental Cross-Cutting Aspects (X) ..... 6

Exhibit 1 – Cross-reference from Common Language Attributes to New Cross-Cutting Aspects 7

Exhibit 2 – Cross-reference from Original Cross-Cutting Aspects to New Cross-Cutting Aspects 8

## 0310-01 PURPOSE

The purpose of this Inspection Manual Chapter (IMC) is to provide a listing of cross-cutting aspects that can be assigned to inspection findings, in accordance with IMC 0612, “**Issue Screening**.” Assigned cross-cutting aspects, which are generally associated with the root causes of performance deficiencies, are evaluated to identify cross-cutting themes, which are assessed as outlined in IMC 0305, “Operating Reactor Assessment Program.”

## 0310-02 OBJECTIVES

To define the cross-cutting aspects that are associated with inspection findings and used in the evaluation conducted to identify cross-cutting themes.

## 0310-03 APPLICABILITY

The cross-cutting aspects described in this IMC are applicable to inspection findings identified through the implementation of the NRC inspection program described in IMC 2515, “Light-Water Reactor Inspection Program-Operations Phase.” The contents of this IMC do not restrict the NRC from taking any necessary actions to fulfill its responsibilities under the Atomic Energy Act of 1954 (as amended).

## 0310-04 DEFINITIONS

04.01 Cross-Cutting Area. Fundamental performance characteristics that extend across all of the Reactor Oversight Process (ROP) cornerstones of safety. These areas are human performance, problem identification and resolution, and safety conscious work environment (SCWE).

04.02 Cross-Cutting Aspect. The performance characteristic of a finding that is either the primary cause of the performance deficiency or the most significant contributing cause.

04.03 Nuclear Safety Culture. The core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals, to ensure protection of people and the environment.

## 0310-05 RESPONSIBILITIES AND AUTHORITIES

05.01 Executive Director for Operations (EDO). Oversees the activities described in this IMC.

05.02 Director, Office of Nuclear Reactor Regulation (NRR). Implements the requirements of this IMC within NRR.

05.03 Regional Administrators. Implement the requirements of this IMC within their respective regions.

05.04 Director, Division of Inspection and Regional Support (NRR/DIRS). Collects feedback from the regional offices on IMC implementation for consideration as part of the ROP continuous improvement process.

05.05 Director, Office of Nuclear Security and Incident Response (NSIR). Ensures uniform IMC implementation for security related inspection findings.

## 0310-06 CROSS-CUTTING AREAS AND ASPECTS

Cross-cutting areas contain the fundamental performance characteristics that extend across all of the ROP cornerstones of safety. These areas are human performance (H), problem identification and resolution (P), and safety conscious work environment (S). Within each cross-cutting area are aspects of performance related to that cross-cutting area.

[NUREG-2165, "Safety Culture Common Language."](#) describes the essential traits and attributes of a healthy nuclear safety culture. NUREG-2165 is based on the common language that was agreed to by NRC staff members, industry representatives, and members of the public who participated in a series of workshops. The common language was finalized during the January 2013 public workshop, and was documented in the enclosure to the meeting summary (Agency Document Access and Management System Accession No. ML13031A343). The Institute for Nuclear Power Operations (INPO) has also published this common language in INPO 12-012, "Traits of a Healthy Nuclear Safety Culture." Selected attributes have been incorporated into this IMC to establish common terms for both the NRC and the nuclear industry. The cross-cutting aspects in this manual chapter are defined consistent with the attributes in the common language document. The common language has been well-vetted and approved, and therefore is not subject to change without going through a change to the NUREG. In deciding which aspect is most appropriate to assign to an inspection finding, inspectors should reference the numerous relevant examples provided in the [NUREG](#).

The NRC assigns cross-cutting aspects to inspection findings, in accordance with IMC 0612, "Issue Screening." The NRC reviews cross-cutting aspects for cross-cutting themes and potential cross-cutting issues, in accordance with IMC 0305, "Operating Reactor Assessment Program," to provide licensees the opportunity to address performance issues before they result in more significant safety concerns. Although the presence of CCAs or the assignment of a cross-cutting issue may be indicative of a potentially degraded safety culture, the NRC draws conclusions about safety culture based on the results of licensee and NRC safety culture assessments conducted by qualified staff, not based on the presence of CCAs or cross-cutting issues.

The "Supplemental Cross-Cutting Aspects" listed in Section 06.04 are not applied to inspection findings under the baseline inspection program. However, these aspects are indicators of a healthy safety culture and should be considered for safety culture assessments performed or reviewed during supplemental inspections. While they are important characteristics of safety culture, some attributes from NUREG-2165 are not included as cross-cutting aspects and are considered to be outside the scope of the reactor inspection program. Exhibit 1 provides a cross-reference from the common language attributes to new cross-cutting aspects. Exhibit 2 provides a cross-reference from the original cross-cutting aspects to the new cross-cutting

aspects resulting from the common language initiative. The common language attributes also are provided at the end of the descriptions in Sections 6.01 through 6.04, and are subsets of the following traits:

- Leadership Safety Values and Actions (LA);
- Problem Identification and Resolution (PI);
- Personal Accountability (PA);
- Work Processes (WP);
- Continuous Learning (CL);
- Environment for Raising Concerns (RC);
- Effective Safety Communication (CO);
- Respectful Work Environment (WE);
- Questioning Attitude (QA); and
- Decision Making (DM).

06.01 Human Performance (H)

H.1	<u>Resources:</u> Leaders ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety (LA.1).
H.2	<u>Field Presence:</u> Leaders are commonly seen in the work areas of the plant observing, coaching, and reinforcing standards and expectations. Deviations from standards and expectations are corrected promptly. Senior managers ensure supervisory and management oversight of work activities, including contractors and supplemental personnel <sup>1</sup> (LA.2).
H.3	<u>Change Management:</u> Leaders use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority (LA.5).
H.4	<u>Teamwork:</u> Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained (PA.3).
H.5	<u>Work Management:</u> The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities <sup>2</sup> (WP.1).
H.6	<u>Design Margins:</u> The organization operates and maintains equipment within design margins. Margins are carefully guarded and changed only through a systematic and rigorous process. Special attention is placed on maintaining fission product barriers, defense-in-depth, and safety related equipment (WP.2).
H.7	<u>Documentation:</u> The organization creates and maintains complete, accurate and up-to-date documentation (WP.3).
H.8	<u>Procedure Adherence:</u> Individuals follow processes, procedures, and work instructions (WP.4).
H.9	<u>Training:</u> The organization provides training and ensures knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values (CL.4).
H.10	<u>Bases for Decisions:</u> Leaders ensure that the bases for operational and organizational decisions are communicated in a timely manner (CO.2).
H.11	<u>Challenge the Unknown:</u> Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding (QA.2).
H.12	<u>Avoid Complacency:</u> Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools <sup>3</sup> (QA.4).
H.13	<u>Consistent Process:</u> Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate (DM.1).
H.14	<u>Conservative Bias:</u> Individuals use decision making-practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop (DM.2).

<sup>1</sup> Adds language from LA.2 example 1 to clarify that this is the appropriate designation for oversight of contractors

<sup>2</sup> Adds language from WP.1 example 1 to clarify that this aspect fully retains what was previously included in H.3(b)

<sup>3</sup> Incorporates language from QA.4 example 5 to clarify that H.12 is the appropriate designation for issues involving a failure to use human error reduction techniques that were previously included under H.4(a)

06.02 Problem Identification and Resolution (P)

P.1	<u>Identification:</u> The organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program (PI.1).
P.2	<u>Evaluation:</u> The organization thoroughly evaluates issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance (PI.2).
P.3	<u>Resolution:</u> The organization takes effective corrective actions to address issues in a timely manner commensurate with their safety significance (PI.3).
P.4	<u>Trending:</u> The organization periodically analyzes information from the corrective action program and other assessments in the aggregate to identify programmatic and common cause issues (PI.4).
P.5	<u>Operating Experience:</u> The organization systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner (CL.1).
P.6	<u>Self-Assessment:</u> The organization routinely conducts self-critical and objective assessments of its programs and practices (CL.2).

06.03 Safety Conscious Work Environment (S)

S.1	<u>SCWE Policy:</u> The organization effectively implements a policy that supports individuals' rights and responsibilities to raise safety concerns, and does not tolerate harassment, intimidation, retaliation, or discrimination for doing so (RC.1).
S.2	<u>Alternate Process for Raising Concerns:</u> The organization effectively implements a process for raising and resolving concerns that is independent of line management influence. Safety issues may be raised in confidence and are resolved in a timely and effective manner (RC.2).
S.3	<u>Free Flow of Information:</u> Individuals communicate openly and candidly, both up, down, and across the organization and with oversight, audit, and regulatory organizations (CO.3).

#### 06.04 Supplemental Cross-Cutting Aspects (X)

The supplemental cross-cutting aspects are to be considered only when performing or reviewing safety culture assessments during the conduct of the supplemental inspections.

X.1	<u>Incentives, Sanctions, and Rewards:</u> Leaders ensure incentives, sanctions, and rewards are aligned with nuclear safety policies and reinforce behaviors and outcomes that reflect safety as the overriding priority (LA.3).
X.2	<u>Strategic Commitment to Safety:</u> Leaders ensure plant priorities are aligned to reflect nuclear safety as the overriding priority (LA.4).
X.3	<u>Roles, Responsibilities, and Authorities:</u> Leaders clearly define roles, responsibilities, and authorities to ensure nuclear safety (LA.6).
X.4	<u>Constant Examination:</u> Leaders ensure that nuclear safety is constantly scrutinized through a variety of monitoring techniques, including assessments of nuclear safety culture (LA.7).
X.5	<u>Leader Behaviors:</u> Leaders exhibit behaviors that set the standard for safety (LA.8).
X.6	<u>Standards:</u> Individuals understand the importance of adherence to nuclear standards. All levels of the organization exercise accountability for shortfalls in meeting standards (PA.1).
X.7	<u>Job Ownership:</u> Individuals understand and demonstrate personal responsibility for the behaviors and work practices that support nuclear safety (PA.2).
X.8	<u>Benchmarking:</u> The organization learns from other organizations to continuously improve knowledge, skills, and safety performance (CL.3).
X.9	<u>Work Process Communications:</u> Individuals incorporate safety communications in work activities (CO.1).
X.10	<u>Expectations:</u> Leaders frequently communicate and reinforce the expectation that nuclear safety is the organization's overriding priority (CO.4).
X.11	<u>Challenge Assumptions:</u> Individuals challenge assumptions and offer opposing views when they think something is not correct (QA.3).
X.12	<u>Accountability for Decisions:</u> Single-point accountability is maintained for nuclear safety decisions (DM.3).



Exhibit 1 – Cross-Reference from Common Language Attributes to New Cross-Cutting Aspects

<u>Common Language Attribute<sup>4</sup></u>	<u>New Cross-Cutting Aspect</u>
LA.1	H.1
LA.2	H.2
LA.3	X.1
LA.4	X.2
LA.5	H.3
LA.6	X.3
LA.7	X.4
LA.8	X.5
PI.1	P.1
PI.2	P.2
PI.3	P.3
PI.4	P.4
PA.1	X.6
PA.2	X.7
PA.3	H.4
WP.1	H.5
WP.2	H.6
WP.3	H.7
WP.4	H.8
CL.1	P.5
CL.2	P.6
CL.3	X.8
CL.4	H.9
RC.1	S.1
RC.2	S.2
CO.1	X.9
CO.2	H.10
CO.3	S.3
CO.4	X.10
QA.2	H.11
QA.3	X.11
QA.4	H.12
DM.1	H.13
DM.2	H.14
DM.3	X.12

<sup>4</sup> NUREG-2165 defines additional attributes beyond those included in the table (e.g., WE.1, WE.2, WE.3, WE.4, and QA.1). These attributes are not being used for ROP applications.

Exhibit 2 – Cross-Reference from Original Cross-Cutting Aspects to New Cross-Cutting Aspects

<u>Old Cross-Cutting Aspect</u>	<u>New Cross-Cutting Aspect</u>
H.1(a)	H.13
H.1(b)	H.14
H.1(c)	H.10
H.2(a)	H.6
H.2(b)	H.9
H.2(c)	H.7
H.2(d)	H.1
H.3(a)	H.5
H.3(b)	H.4, H.5
H.4(a)	H.11, H.12
H.4(b)	H.8
H.4(c)	H.2
P.1(a)	P.1
P.1(b)	P.4
P.1(c)	P.2
P.1(d)	P.3
P.1(e)	S.2
P.2(a)	P.5
P.2(b)	P.5
P.3(a)	P.6
P.3(b)	P.4
P.3(c)	P.6
S.1(a)	S.1, S.3
S.1(b)	S.2
S.2(a)	S.1
S.2(b)	S.1
S.2(c)	S.1
O.1(a)	X.1
O.1(b)	H.2
O.1(c)	X.6
O.2(a)	H.9
O.2(b)	X.8
O.3	H.3
O.4(a)	S.1
O.4(b)	H.9
O.4(c)	X.2
O.4(d)	X.10

Attachment 1 – Revision History for IMC 0310

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment and Feedback Resolution Accession Number (pre-Decisional, Non-Public Information)
C1	ML100290993 02/23/10 CN 10-006	Initial Issuance of IMC. Commitment carried forward from IMC 0305 to enhance ROP to more fully to address safety culture (SRM 04-0111)	N/A	N/A
	ML091480473 10/28/11 CN 11-023	Revised definition of Cross Cutting Aspect (FF 0310-1558) and Updated Formatting for improved usability (no red line for formatting changes, FF 0310-1478).	N/A	N/A
	ML13351A028 12/19/13 CN 13-029	Revised cross-cutting aspects to align with the safety culture common language attributes and the Commission's safety culture policy statement.	Yes, completed November and December 2013	
	ML14337A018 12/04/14 CN 14-029	Editorial revision to provide a reference and link to NUREG-2165, "Safety Culture Common Language" based on FBF 0310-2035.	N/A	ML14321A004 0310-2035
	ML19011A360 02/25/19 CN 19-008	Editorial revisions based on title change to IMC 0612 and other edits per the NRC Style Guide, NUREG-1379	N/A	N/A