**NRC INSPECTION MANUAL** IRSB

INSPECTION MANUAL CHAPTER 0307 APPENDIX B

REACTOR OVERSIGHT PROCESS SELF-ASSESSMENT BASELINE INSPECTION PROGRAM MONITORING AND COMPREHENSIVE REVIEW

Effective Date: 06/01/2020

0307B-01 PURPOSE

The Reactor Oversight Process (ROP) self-assessment program evaluates the overall effectiveness of the ROP in meeting its goals and intended outcomes. This procedure provides the process and scope for continuous monitoring of the baseline inspection procedures and a periodic comprehensive review of the baseline inspection program.

0307B-02 OBJECTIVES

02.01 To continuously monitor the effectiveness of the baseline IPs.

02.02 To periodically ensure that the baseline inspection program is effective in providing the minimum level of inspection to assure that licensee performance adequately meets the objectives for each cornerstone of safety.

02.03 To periodically ensure that the baseline inspection program meets the objectives, scope, and intent of the basis provided in IMC 0308 and IMC 0308 Attachment 2.

0307B-03 APPLICABILITY

This Appendix applies to the NRC baseline inspection program as described in IMC 2515, Appendix A, the bases for which is found in IMC 0308 and IMC 0308, Attachment 2.

0307B-04 RESPONSIBILITIES AND AUTHORITIES

04.01Director, Division of Reactor Oversight, Office of Nuclear Reactor Regulation; Director, Division of Security Operations and Director, Division for Preparedness and Response, Office of Nuclear Security and Incident Response

1. Review and approve any significant resource changes to IPs per IMC 0040 process.
2. Provide an SES sponsor for the baseline inspection program review to provide oversight, objective guidance, and assistance with change management and resolving differing views, as requested by the review team.
3. Approve the baseline inspection program review charter and final report, including consideration of any recommendations for improvement.

04.02 Regional Directors, Divisions of Reactor Safety, Reactor Projects, and Nuclear Materials Safety (as applicable)

Participate in the baseline inspection program review by reviewing the team’s analysis and recommendations.

04.03 Chief, Reactor Inspection Branch (IRIB)

1. Appoint a Team Lead, participate in, and provide staffing support for the baseline inspection program review.
2. Appoint a Baseline IP Continuous Monitoring Lead to coordinate the continuous monitoring of baseline IPs and associated reporting requirements.
3. Review and concur on the baseline inspection program review charter and final report, including recommendations for improvement.
4. Review and approve the semi-annual baseline IP continuous monitoring report.
5. Review and recommend approval for any significant resource changes to IPs per process in IMC 0040.
   1. Branch Chiefs of IP Lead(s)

Ensure that IP leads conduct satisfactory continuous monitoring of their respective baseline IPs that fall under the responsibility of the branch.

* 1. Chief, Operating Experience Branch

1. Provide staffing support for the baseline inspection program review.
2. Provide data analytics support, as necessary, for any significant trends identified through baseline IP continuous monitoring effort.
   1. Baseline Inspection Program Review Team Lead
3. Develop review schedule and coordinate team meetings and activities in accordance with the guidance in this Appendix.
4. Coordinate development and concurrence process on review charter and completion report.
5. Provide input to the annual ROP self-assessment Commission paper regarding the status or completion of the review, as applicable.
   1. Baseline IP Continuous Monitoring Lead
6. Facilitate web-based quarterly reporting method for use by IP leads to enter continuous baseline IP monitoring results.
7. Collect continuous baseline IP monitoring results via web-based quarterly reporting.
8. Aggregate baseline IP lead continuous monitoring results into a semi-annual report for DRO management.
9. Inform the Operating Experience Branch Chief if there are any significant trends in findings noted as a part of continuous baseline IP monitoring for further analysis, as needed.
10. Aggregate and summarize highlights of the baseline IP continuous monitoring results as an input to the annual ROP self-assessment Commission paper.
11. Provide the baseline IP continuous monitoring data from the past 5 years to the Baseline Inspection Program Review team for review.

04.08 Baseline Inspection Procedure Lead(s)

1. Perform continuous monitoring of assigned IPs and report results into the designated web-based repository on a quarterly basis.
2. Participate in the baseline inspection program review (conducted every fifth year), as directed.
3. Obtain regional inspection perspectives on assigned IPs through interviews, meetings, and observation or participation in inspections in the field.
4. Revise IP(s) as appropriate to maintain or improve effectiveness.
5. As necessary, work with the RRPS-Inspections lead to modify/improve automated reports that support continuous baseline IP monitoring.

04.09 Chief(s), Regional Technical Support Branch

1. Identify regional POCs for IP leads to obtain inspector perspective, as required.
2. Coordinate regional participation in baseline inspection program review.

04.10 Regional Points of Contact

Provide inspector’s perspective on IP implementation to IP leads.

0307B-05 REQUIREMENTS

05.01 IP Lead Expectations

The baseline IP lead shall remain cognizant of the implementation of his or her assigned IP(s) by addressing questions raised by the regions and inspectors, addressing input provided through the feedback form process, participating in industry meetings, reviewing relevant operating experience, and participating in or observing inspections. The IP lead shall coordinate inspection observation or participation through the regional POCs. The IP lead will establish and maintain working relationships with internal stakeholders such as regional points of contact to obtain inspectors’ perspectives on the IP implementation.

As staff are assigned as baseline IP lead(s), they shall work to develop and maintain a thorough understanding of the following areas:

1. The bases for the baseline inspection program as a whole, as well as the bases for the inspectable areas in one’s assigned IP(s), especially in terms of the risk-informed approach (IMC 0308 and IMC 0308 Attachment 2)
2. Recent regulatory changes (e.g., regulatory requirements, regulatory guides, licensee commitments, generic communications) that could impact assigned IP(s)
3. Recent management direction, regional needs, external stakeholder feedback, and ROP feedback form resolution that may lead to changes to baseline IP(s)
4. Requirements in Management Directive 8.13 for ROP changes requiring Commission approval or notification
5. Operating experience issues related to assigned IP(s)

Maintaining level of knowledge in these areas will ensure that baseline IP leads have the necessary expertise to effectively carry out the responsibilities detailed in Section 05.02 below.

05.02 Scope and Process

The IP Lead Desktop Guide (a living document that can be found on the internal NRC IP/IMC Leads Expectations SharePoint Page) provides detailed, implementation-level guidance regarding the actions described below. The IP Lead Desktop Guide is based on the IP Leads Expectation Memo (also found on the SharePoint page), and so it does contain guidance for more activities than what is provided for in this Appendix.

The IP lead is responsible for conducting, supporting, and participating in the following activities:

1. Continuous Monitoring of Baseline IPs

On a continuous basis, not to exceed quarterly, the baseline IP lead shall evaluate the implementation and effectiveness of her or his assigned IP(s) through analysis of relevant ROP program execution data that is readily accessible in RRPS-Inspections and the Cost Accounting Code System (CACS) Labor Summary report modules. This continuous monitoring will include trend analysis of the following data related to the assigned baseline IP(s): the number and severity of inspection findings, inspection hours charged, inspection samples completed, number of inspection findings per 1000 hours, traditional enforcement violations, and any regional differences among these data sets. This continuous monitoring will also include the review of selected findings from 2-3 inspection reports to identify trends in inspection results and to ensure conformance with IMC 0611. IP leads will follow Exhibit 1 in performing this activity for their assigned IPs, as well as the IP Lead Desktop Guide found at the same link as above.

Baseline IP leads may also use data trending and search capability resources that pull from RRPS-Inspections and CACS data sources, such as dashboard and data analytics tools provided by the Operating Experience Branch.

Significant trends (as compared to historical averages or expected trends) shall be identified and the cause explored. The baseline IP lead will act as required for any adverse trends detected, considering possible improvements to the assigned IP(s) in terms of scope, clarity, and adjustments in samples or hours.

To ensure that the baseline IP monitoring efforts are aggregated and that results are documented, the baseline IP leads will enter the results of their monitoring efforts into the SharePoint-based documents located on the NRC internal IMC/IP Leads Expectations SharePoint Site on a quarterly basis. The Baseline IP Continuous Monitoring Lead will aggregate these results into semi-annual reports in May and October (data is entered by April and September). A summary of the most significant baseline IP monitoring results will be included in the annual ROP self-assessment SECY.

The Baseline IP Continuous Monitoring Lead will also inform the Operating Experience Branch Chief if there are any significant trends in findings noted as a part of this activity, for further action as needed. IP leads are responsible for sharing the results of their continuous monitoring with their supervisors, for processing any IP revisions identified as part of this monitoring activity, and for creating and delivering any additional inspector training identified as required. Any additional training required will be coordinated through IRSB to discuss the best forum to present the training.

The baseline IP monitoring efforts described in this subsection do not, in and of themselves, satisfy the periodic IMC/IP review/update requirement described in OVRST-102, where each IP must be reviewed at least once every five years and either revised as necessary or reissued noting that a detailed review has been performed and a revision to the document was not warranted. The baseline IP lead will use their best judgement in determining the additional scope of review necessary to fulfill this requirement, such as ROP feedback forms processed, field observations, and recent operating experience.

1. Comprehensive Baseline Inspection Program Review

The staff will conduct a comprehensive baseline inspection program review every 5th year (the year after NRR has completed ROP implementation audits for all four regions). This review will holistically evaluate the entire baseline inspection program for meeting the intent of IMC 0308 and its Attachment 2; any necessary program-wide adjustments in inspection hours or samples; any opportunities for increased use of risk information in the program; any additions or deletions of baseline IPs; any larger-scale shifts in resource estimates, samples, or hours; and any other improvements.

The review will be conducted by a cross-functional team comprised of a number of baseline IP leads and regional inspectors/staff, with the team lead from DRO/IRIB. The DRO Director will assign an SES sponsor for the baseline inspection program review who will provide oversight, guidance, and assistance with change management and resolving differing views, as requested by the review team.

Once the team is identified, the team will use Exhibit 2 to develop and conduct a web-based survey intended to be completed by all the baseline IP leads, a selection of resident and regional inspectors, and any other staff desired to provide input per Exhibit 2 (e.g., PI program area lead, operating experience staff). The results of this survey, as well as recent areas of management focus, licensee performance trends, and any recent Commission direction, will inform the team’s selection of one to two (nominal, 3 maximum) baseline inspection program review focus areas. Once the focus areas are determined, the team will draft a charter which will be reviewed and approved by the DRO Division Director and then begin the review. If the review’s focus area(s) is centered on a specific group of IPs, the leads for those IPs shall be invited to join the review team.

The review shall be conducted using the timeline and milestones described in Exhibit 3 as a guide. The team will leverage ROP program execution data to the maximum extent possible in both the review and in the development and justification for any recommended improvements to the baseline inspection program. Additionally, the review team shall look for opportunities to further risk-inform the baseline inspection program. The team will also utilize risk-informed approaches in developing recommendations and decision-making during the review.

Once the review is complete and recommendations are developed, the review team will present their results and recommendations, if any, to DRO management and branch chiefs, and the regional technical support and assessment branch chiefs and team leads and regional DRP/DRS management. Once these presentations are complete and the team has made any necessary adjustments to ensure alignment, the review team will issue a memo documenting the results of the review and any recommendations for improvement. Appropriate staff will proceed to implement any recommendations approved by management for implementation, including revisions to baseline IPs or other actions, as required. Recommendations from the review which may be more complex or require coordination between multiple IP leads shall be entered into the ROP lessons learned tracker.

1. Focused Assessments

The staff may take credit for the baseline inspection program review as a focused assessment if the periodicity for the two self-assessment activities align in any given year.

1. Effectiveness Reviews

If a revision to a baseline IP meets the threshold for an effectiveness review as described in IMC 0307, or as identified by the DRO Division Director, the appropriate baseline IP lead will perform the effectiveness review. The purpose of the effectiveness review is to evaluate whether the change, as implemented, was effective and whether it had any unintended consequences. The effectiveness review shall follow the process described in IMC 0307.

0307B-06 REFERENCES

IMC 0040, “Preparing, Revising, and Issuing Documents for the NRC Inspection Manual”

IMC 0307, “Reactor Oversight Process Self-Assessment Program”

IMC 0308, “Reactor Oversight Process Basis Document”

IMC 0611, “Power Reactor Inspection Reports”

IMC 0801, “Inspection Program Feedback Process”

IMC 2523, “NRC Application of the Reactor Operating Experience Program in NRC Oversight Processes”

IP Lead Desktop Guide, located on the internal IMC/IP Leads Expectations SharePoint Site (nonpublic)

NRR Office Instruction OVRST-102, “NRR Procedures for Processing Inspection Manual Documents” (nonpublic)

END

Exhibit 1: Continuous Baseline Inspection Procedure Monitoring Guide

Exhibit 2: Baseline Inspection Program Review Guidelines

Exhibit 3: Timeline and Milestones for Baseline Inspection Program Review

Exhibit 4: Revision History for IMC 0307 Appendix B

Exhibit 1: Continuous Baseline Inspection Procedure Monitoring Guide

(Use in conjunction with the IP Leads Desktop Guide)

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| Step | Action / Question |
| 1 | Review the following ROP program data1 from the past three months, compared to recent and historical averages for your assigned IP(s): the number and significance of inspection findings, inspection hours charged, inspection samples completed, number of inspection findings per 1000 hours, traditional enforcement violations, both agency-wide and by region. Identify any significant positive or negative trends. |
| 2 | Conduct a review of selected findings from 2-3 inspection reports to identify trends in inspection results and to ensure conformance with IMC 0611. |
| 3 | Are there any significant differences between actual hours charged for assigned IPs versus the resource estimate? Is a realignment of the IP resource estimate needed? Are there any adjustments to hours or samples that might increase flexibility or efficiency for inspectors? |
| 4 | Did you observe or participate in implementation of your assigned IP(s) in the field in the last three months? Please provide a short summary and any insights gained from this activity. |
| 5 | Provide a summary of proposed changes to your assigned baseline IP(s) from this activity, or state that no changes were identified. Include any proposed changes to samples or hours, any required inspector training, or any other IP adjustments. Also note whether the change(s) (if any) should be noted in the annual ROP self-assessment SECY. |
| 6 | Do you recommend the staff to perform a focused assessment on this IP, or a group of IPs, or have this IP (or a group of IPs) be a focus area in the next baseline inspection program comprehensive review? |
| 7 | Provide any insights or data that you would like to preserve for the next baseline inspection program review. |
| 8 | The above information shall be entered into the appropriate SharePoint-based documents located on the internal NRC IMC/IP Leads Expectations SharePoint Site. |

1 The majority of this data should be available from RRPS-Inspections and CACS Labor Summary reports. These reports should provide hours charged per IP, inspection findings per IP, and the ability to look at these data on an agency and regional basis. See the IMC/IP Leads Desktop Guide available on the IMC/IP Leads Expectations SharePoint site for additional information.

Exhibit 2: Baseline Inspection Program Review Guidelines

The below questions and requested information shall form the foundation of the baseline inspection program review, but are not meant to be the only lines of inquiry. They should form the majority of the survey which is completed by all baseline IP leads and a selection of resident inspectors. Additionally, the baseline inspection program review team should review these questions periodically while conducting their review and once recommendations are developed.

1. The Baseline IP Continuous Monitoring Lead shall provide a summary of significant IP changes, insights, and significant trends from the last 5 years for assigned baseline IP(s). This information can be summarized from the baseline IP monitoring results covering that time period, which shall be made available by the Baseline IP Continuous Monitoring Lead.

Input: Baseline IP leads

1. The majority of inspectable areas for the baseline inspection program were chosen for their risk significance (needed to meet a cornerstone objective as derived from a combination of probabilistic risk analyses insights, operational experience, deterministic analyses insights, and regulatory requirements). Given any changes in overall fleet performance, operating experience, regulatory requirements, rulemaking, TS changes, etc., are the inspectable areas covered by the baseline IPs still based on risk importance, if applicable, in measuring a cornerstone objective? Do any need inspectable areas need to be added or deleted?

Input: Baseline IP leads, Resident Inspectors

1. The scope of baseline IPs is determined using a risk-informed approach. Are there any baseline IPs that need to be reduced or increased in scope commensurate with any changes in plant/component risk significance?

Input: Baseline IP leads, Resident Inspectors

1. The scope of a baseline IP is dependent on the applicability of a PI. The more fully a PI measures an area, the less extensive is the scope of inspection. Have there been any changes to PIs since the last baseline inspection program review that would necessitate a review of the scope of any baseline IP or group of IPs?

Input: Baseline IP leads, PI program area lead

1. Does the baseline inspection program still represent the minimum level of inspection required at a power plant, regardless of performance, to adequately assess licensee performance in meeting the cornerstone objectives?

Input: Baseline IP leads, Resident Inspectors

1. If there are current baseline inspectable areas (or IP scope) that may be above the minimum described above, should these inspectable areas more appropriately be included in a supplemental inspection procedure, or deleted from the inspection program?

Input: Baseline IP leads, Resident Inspectors

1. Do any changes to the baseline inspection program recommended by the review team revise inspection elements which are fundamental to the ROP as defined in IMC 0308, “Reactor Oversight Process Basis Document?” If so, ensure that IMC 0308 is updated and that Commission notification/approval requirements are met per MD 8.13, “Reactor Oversight Process.”

Input: Baseline inspection program review team (This question is for the baseline inspection program review team once the review is completed and recommendations developed.)

1. Is there any recent operating experience related to baseline IPs or to risk-significant areas that requires attention or changes to the baseline inspection program?

Input: Operating experience staff

Exhibit 3: Timeline and Milestones for Baseline Inspection Program Review (BIPR)

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| --- | --- | --- | --- |
| Activity | Month | Lead | Participants |
| Build Team and Identify Team Lead for BIPR | January | IRIB BC | - |
| Develop and conduct baseline IP lead and resident/regional inspector survey. | February (leverage most recent inspection cycle results in RPS) | BIPR Team Lead | BIPR Team, All Baseline IP leads, sample of RIs from each region |
| Using survey results and management input, develop focus areas and issue charter.  Commence review. | Early March | BIPR Team Lead | BIPR Team, DRO Management, Regional Division Directors and TSAB BCs/TLs |
| Communicate with baseline IP leads, regional staff, RIs, DRO staff as necessary to complete review. | March – May | BIPR Team Lead | BIPR Team, others as necessary |
| Complete review and develop recommendations for improvement. | June | BIPR Team Lead | BIPR Team |
| Present results and recommendations to DRO, DRS, DRP management at DDCM. Address feedback. | July | BIPR Team Lead | BIPR Team, DDCM participants |
| Document conclusions and recommendations in memo to DRO Director. | August | BIPR Team Lead | BIPR Team, IRIB BC, DRO Director |
| Revise baseline IPs or IMCs, as required, to implement approved recommendations. Larger, longer-term programmatic change recommendations into the ROP lessons learned tracker. | July - December | Assigned Baseline IP leads | - |
| Identify and conduct training on resulting program changes, if required. | July-December | Assigned Baseline IP Leads | - |
| Implement revised IPs, as required | Beginning January | Inspectors | - |
| Provide input for annual ROP Self-Assessment SECY. | January | BIPR Team Lead | - |

Attachment 1

Revision History for IMC 0307 Appendix B

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| --- | --- | --- | --- | --- |
| Commitment Tracking Number | Accession Number  Issue Date  Change Notice | Description of Change | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
| N/A | ML070120370  01/25/07  CN-07-003 | Initial issuance of Appendix B to  IMC 0307. | N/A | ML070120373 |
| N/A | ML083110462  04/09/09  CN 09-011 | Revisions to incorporate several recommended changes from regional Division Directors | N/A | ML090640898 |
| N/A | ML112990461  10/13/11  CN 11-019 | Revisions made to incorporate several recommended changes that resulted during the implementation of the 2011 ROP realignment. | N/A | ML112990461 |
| N/A | ML15187A398  11/23/15  CN 15-025 | Complete rewrite of IMC to incorporate lessons learned from ROP Enhancement – Baseline Inspection Program and Self-Assessment Projects. Changes include incorporating annual assessment of BIP that was previously addressed in IMC 0307; adding focus and effectiveness reviews; addressing resource changes as part of the annual assessment and focus and effectiveness reviews in lieu of a separate realignment, and providing additional details to the assessment process to aid the Inspection Procedure Leads. | N/A | ML15225A113 |
| N/A | ML17165A508  08/25/17  CN 17-016 | Revised to reduce frequency to biennial vice annual and for clarity of language. Many aspects of the inspection program operate on a two year cycle and as such there is insufficient meaningful data to perform a yearly assessment. | N/A | ML17167A017 |

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| Commitment Tracking Number | Accession Number  Issue Date  Change Notice | Description of Change | Description of Training Required and Completion Date | Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional, Non-Public Information) |
| N/A | ML19289A965  05/29/20  CN 20-025 | Complete reissuance (major rewrite, satisfies periodic/review update requirement) to incorporate changes to the ROP self-assessment program as a result of the 2019 holistic review. Implemented data-driven continuous baseline IP monitoring and a comprehensive baseline inspection program review every 5 years. | N/A | ML19274C497 |