NRC INSPECTION MANUAL

MANUAL CHAPTER 2515

LIGHT-WATER REACTOR INSPECTION PROGRAM—OPERATIONS PHASE

2515-01 PURPOSE

To establish the policy for the light-water operating reactor inspection program.

2515-02 OBJECTIVES

02.01 To obtain factual information providing objective evidence that power reactor facilities are operated safely and licensee activities do not pose an undue risk to public health and safety.

02.02 To determine the causes of declining performance before such performance reaches a level that may result in an undue risk to public health and safety.

02.03 To identify those safety significant issues that may have generic applicability.

02.04 To provide direction for modifying the baseline inspection program in the event of a pandemic.

2515-03 APPLICABILITY

This inspection program is implemented when an operating license is issued for a facility. Portions of the light-water reactor inspection program for the startup phase (IMC 2514) may also be conducted during the initial operation of a facility. The light-water reactor inspection program for the preoperational testing and operational preparedness phase (IMC 2513) will have been completed by the time this program is in effect.

This inspection program will remain in effect until the facility is permanently shut down and enters the post-operational phase (cf. IMC 2561, "Decommissioning Power Reactor Inspection Program").

As directed by section 2515-14 and Appendix E of this IMC, inspection program can be modified in the event of a pandemic that severely reduces available inspection resources.

2515-04 DEFINITIONS OF INSPECTION FREQUENCIES

04.01 Triennially or Every Three Years (T)[1]. The inspection will be performed at least once during Reactor Oversight Process (ROP) cycles 1-3, ROP cycles 4-6, ROP cycles 7-9, etc. It is not intended for this to be based on a rolling 3 year cycle.

04.02 Biennially or Every Two Years (B)[1]. The inspection will be performed at least once during ROP cycles 1-2, ROP cycles 3-4, ROP cycles 5-6, etc. It is not intended for this to be based on a rolling 2 year cycle.

04.03 Annually (A). The inspection effort will be performed at least once each calendar year.

04.04 Semiannually (S). The inspection effort will be performed two times each calendar year, once each half calendar year.

04.05 Quarterly (Q). The inspection effort will be performed four times each calendar year, once each calendar quarter.

04.06 As Needed (AN). The inspection effort should be performed when the activity or event occurs at the facility as specified in the guidance section of specific inspection procedures (e.g., refueling outages).

04.07 Baseline Inspection Program Completion. Baseline Inspection Program completion for an ROP annual inspection cycle is defined to be not more than four (4) inspection procedures not completed, per Region. For the purposes of this definition, each inspection procedure attachment is counted as a separate inspection procedure (IP).

This sixteen (16) inspection procedure allowance per year nationwide equates to an annual completion rate greater than 99.5% (assuming an average of 3400 total inspection procedures/attachments per year nationwide - approximately 33 per year X 103 plants). This allowance is intended to provide for unanticipated disruptions in inspection scheduling that unavoidably cause an inspection procedure or attachment to not be completed and presumes that at least the minimum inspection requirements will otherwise be completed as soon as possible within the quarter immediately following the annual inspection cycle. Achieving this level of Baseline Inspection performance provides a basis to conclude that the intent of the Baseline Inspection Program has been met and therefore, for the purpose of goal monitoring, can be reported as complete for that annual cycle.

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[1] ROP cycles are as follows:

Cycle 1: April 2, 2000 - March 31, 2001
Cycle 2: April 1, 2001 - December 31, 2001
Cycle 3: January 1, 2002 - December 31, 2002
Cycle 4: January 1, 2003 - December 31, 2003
Cycle 5: January 1, 2004 - December 31, 2004
Cycle 6: January 1, 2005 - December 31, 2005

2515-05 RESPONSIBILITIES AND AUTHORITIES

05.01 Director, Office of Nuclear Reactor Regulation.

a. Provides overall program direction for the reactor inspection program.

b. Develops and directs the implementation of policies, programs, and procedures for inspecting applicants, licensees, and other entities subject to NRC jurisdiction.

c. Assesses the effectiveness, uniformity, and completeness of implementation of the reactor inspection program.

d. In the event of a pandemic, concurs on the regions' recommendations to the modification to the inspection program in accordance with the direction provided under section 2515-14 and Appendix E of this IMC.

05.02 Associate Director for Inspection and Programs. Directs the development of the inspection program within the Office of Nuclear Reactor Regulation (NRR).

05.03 Director, Division of Inspection & Regional Support (DIRS). Manages inspection program development within NRR, develops and prepares revisions to the reactor inspection program, oversees regional implementation, and serves as the NRR contact with the regional offices for program development and implementation.

05.04 Directors, Technical Divisions, NRR. Assists the Director, DIRS in developing the technical content of and reviewing periodic revisions to the requirements and guidance contained in inspection procedures related to their areas of technical expertise.

05.05 Regional Administrator.

a. Provides program direction for management and implementation of the inspection program elements performed by their regional office.

b. Ensures, within budget limitations, that the regional office staff includes adequate numbers of inspectors in the various disciplines necessary to carry out the inspection program described in this chapter, including that which may be needed for regional supplemental and reactive inspections.

c. Directs the implementation of the supplemental inspection program in accordance with the guidance in Appendix B of this document.

d. Applies inspection resources, as necessary, to deal with significant issues and problems at specific plants.

e. *Ensures that line managers assign inspectors who are appropriately trained and have the necessary knowledge and skills to successfully implement inspection procedures.* [C2]

f. Determines that a pandemic situation which affects inspection resource availability has occurred and recommends modification to the inspection program in accordance with the direction provided under section 2515-14 and Appendix E of this IMC.

2515-06 REGULATORY OVERSIGHT FRAMEWORK

The fundamental building blocks that form the framework for the regulatory oversight process are seven cornerstones of safety; initiating events, mitigating systems, barrier integrity, emergency preparedness, occupational radiation safety, public radiation safety, and physical protection. These cornerstones have been grouped into three strategic areas: reactor safety, radiation safety, and safeguards. This framework is based on the principle that the agency's mission of assuring public health and safety is met when the agency has reasonable assurance that licensee's are meeting the objectives of the seven cornerstones of safety. The reactor inspection program is an integral part, along with performance indicators (PIs), assessment, and enforcement, of the reactor oversight process. Acceptable performance in the cornerstones, as measured by the PIs and the risk-informed baseline inspection program, is indicative of overall licensee performance that provides for adequate protection of public health and safety. The PI program reporting guidelines are in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," which is endorsed by the NRC.

Another principle of the framework is that there is a level of licensee performance in the cornerstones above which the NRC does not need to engage the licensee beyond some minimum level. When this level of licensee performance is reached, the risk-informed baseline inspection and PI programs are sufficient to provide reasonable assurance of public health and safety.

The supplemental portion of the inspection program will provide more diagnostic inspections of identified problems and issues beyond the baseline. Supplemental inspections will be planned in response to issues that result in crossing an Action Matrix threshold. These changes to the inspection program are factored into the inspection program through the assessment process, as further discussed in Section 8.0, below.

2515-07 OPERATING REACTOR INSPECTION PROGRAM ELEMENTS

The inspection program described in this manual chapter is comprised of the following three major program elements:

1. Risk-Informed Baseline Inspection Program (Baseline) Inspections

2. Plant Specific Supplemental Inspections

3. Generic Safety Issue, Special, and Infrequent Inspections

Overall, the inspection program emphasizes achieving a balanced look at a cross section of licensee activities important to plant safety, reliability, and risk. The baseline inspections

constitute an appropriate level of inspection at plants whose overall performance remains in the licensee response band. Plants, whose performance is outside the licensee response band, will receive additional plant specific supplemental inspection based on their assessed performance in the cornerstones of safety. Additionally, Appendix D is provided for use by the resident inspectors in conducting routine activities such as plant tours that may assist them in identifying potentially risk significant activities.

The supplemental inspections, described in Appendix B, are only performed as a result of performance issues that are identified by either performance indicators (PIs), baseline inspections, or event analysis. The depth and breadth of specific supplemental inspections chosen for implementation will depend upon the risk characterization of the issues as shown in the Action Matrix of the reactor assessment program (IMC 0305, “Operating Reactor Assessment Program”).

The need for additional inspections to address emergent generic safety issues, such as those that were performed for motor-operated valves and year 2000 issues, will be assessed on a case by case basis. Also, the need for performing additional inspections to review major licensee evolutions such as testing and operation of independent spent fuel storage facilities or steam generator replacements will be assessed.

In addition to the three elements, the inspection program also provides for the agency’s response to operational events. The guidance for determining the level of response to an event is contained in NRC Management Directive 8.3, “Incident Investigation Program.”

07.01 Risk-Informed Baseline Inspections. The baseline inspection program element, described in Appendix A, is to be performed at all operating reactors. It requires inspections of licensee performance in the seven cornerstones of safety.

The baseline inspections provide sufficient examination of the plants and licensee activities to determine, along with performance indicators, whether licensees are meeting the objectives of all seven cornerstones, and to identify indications of performance problems to allow further engagement by the NRC before the objectives of the cornerstones are compromised.

The inspection procedures included in the baseline inspection program are based on “inspectable areas” for the seven cornerstones of safety. The oversight framework identified key attributes for each cornerstone that need to be verified to have a reasonable assurance that the cornerstone objectives are met. Licensee performance within the key attributes are then measured by either a performance indicator, a risk-informed inspectable area, or a combination of both indicator and inspection.

The baseline inspection procedures are organized by cornerstone and include the inspectable areas associated with the cornerstone. The baseline inspections are performance-based and risk-informed and emphasize the observation and evaluation of ongoing facility operations and supporting activities affecting the safety function of facility structures, systems, and components. Appendix D has been provided to assist the resident inspectors in conducting activities that may identify potentially risk significant activities. The baseline inspections are risk informed through (1) the inspectable areas, which are based on their risk importance in measuring a cornerstone objective; (2) the inspection frequency

and sample size for each inspectable area, which are based on risk information; and (3) sample selection of activities and equipment to inspect in each inspectable area, which is based on risk insights that will be modified by plant-specific information.

Appendix A contains a list of baseline inspection procedures and specifies the required frequency for their performance. The baseline inspection procedures must be completed at every plant at a prescribed interval. The expectation is that the regions should normally complete the nominal (average) number of inspection samples identified in the inspection procedure. The regions may vary the inspection samples within the ranges as indicated in each baseline inspection procedure, based on licensee performance and inspector insights. For the purposes of completing the baseline inspection program, the number of samples completed must be within the range of values specified in each inspection procedure. [C2]

Inspection requirements are the controlling factor in determining the amount of inspection effort necessary to complete the baseline inspections. Appendix A provides an estimate of the hours associated with each inspection procedure for overall resource planning only.

07.02 Plant Specific Supplemental Inspections.

The supplemental element of the inspection program is designed to apply NRC inspection assets in an increasing manner when performance issues are identified, either by inspection findings evaluated using the significance determination process (SDP) or when performance indicator thresholds are exceeded. Accordingly, the NRC regional office will assess the need for supplemental inspections after identifying an inspection finding categorized as risk significant (i.e., white, yellow, or red) with the SDP, or when a performance indicator exceeds the licensee response band threshold. The scope and breadth of these inspections will be based upon the guidance provided in the assessment program's Action Matrix and expanded upon in the "Supplemental Inspection Selection Table" included in Appendix B.

Depending on the risk significance and breadth of the identified performance issues, the supplemental inspections provide a graded response, which includes: oversight of the licensee's root cause evaluation of the issues; expansion of the baseline inspection sample or a focused team inspection (as necessary to evaluate extent of condition); or a broad scope, multi-disciplined team inspection, which would include inspection of multiple cornerstone areas and inspection of crosscutting issues. Any new issues identified during the supplemental inspections will be evaluated by the SDP. The need for additional NRC actions, including additional supplemental inspections, will be governed by the Action Matrix.

A supplemental inspection will be performed for all white, yellow, or red issues (either PIs or inspection findings). The region may choose not to perform a supplemental inspection for white issues identified as part of a licensee's self assessment, although such exceptions are expected to be infrequent. In such instances, the region will still ensure that the issue is entered into the licensee's corrective action program and that an appropriate evaluation is performed. The licensee's evaluation for such an issue will be reviewed as part of baseline inspection procedure 71152, "Identification and Resolution of Problems." Additionally, the regional offices may choose to propose a deviation from the Action Matrix when the level of supplemental inspection is not appropriate for the particular

circumstances. Examples of when the level of supplemental inspection may need to be increased or decreased include (but are not limited to): 1) a single red finding or performance indicator that does not appear to be indicative of broad programmatic concerns, 2) a single red inspection finding or performance indicator, particularly those that meet the criteria for old design issues, 3) multiple examples of non-SDP Severity Level III or greater enforcement actions, 4) a type of finding unanticipated by the SDP that results in an inappropriate level of regulatory attention when entered into the Action Matrix. A deviation from the Action Matrix may be authorized in accordance with IMC 0305, "Operating Reactor Assessment Program."

07.03 Generic Safety Issues, Special, and Infrequent Inspections. Concerns with specific safety issues that arise may be addressed solely through the NRR license review process and the use of regulatory communications issued to licensees. If the concern is of safety significance, it may be appropriate to perform a one-time inspection under the safety issues program element. These inspections will be established by temporary instructions (TIs). For example, when it is determined that a safety issue addressed in a bulletin or generic letter requires inspection verification or followup, requirements and guidance for the inspection will be developed and issued in a TI. Unless such a TI is issued, inspection followup is not required to verify completion of licensees' actions discussed in a bulletin or generic letter. When a TI is issued, overall assessment ratings may be considered in establishing priorities for conducting these inspections. The plants to be inspected will be designated in the TIs.

The resources budgeted to safety issues inspections are established by NRR. It is the intent that the inspections be conducted within the resources budgeted for that element of the program.

Specific criteria for closing a TI will be addressed in the TI itself. In general, TIs should not be closed until all relevant safety issue items have been completed by the licensee and verified by inspection. However, exceptions may be considered when the licensee's schedule for completing items remaining is acceptable, properly documented, and is not a critical element to resolving the safety issue.

The need may arise for specific inspections to address major evolutions limited to a few licensees such as upgrading to a digital control system. The need for these inspections will also be assessed on a case-by-case basis and conducted under the guidance of a temporary instruction.

This element of the inspection program also includes other special or infrequently performed inspections. These inspections may be in response to events, infrequent major activities at nuclear power plants, or to fulfil the NRC's obligations under interagency memoranda of understanding. The applicable procedures are listed in Appendix C, "Special and Infrequently Performed Inspections."

07.04 Related Activities Associated with the Reactor Inspection Program. All inspections, as well as performance indicators reported by licensees, provide input to the plant performance assessment process. The performance assessment process is to be conducted in accordance with IMC 0305, "Operating Reactor Assessment Program."

2515-08 DISCUSSION

08.01 General. The inspection program described in Appendices A, B, and C is intended to provide the framework for managing inspection resources without being overly prescriptive. At the same time, a level of inspections necessary to complete pre-defined objectives at a facility is specified, below which inspection should not decrease. It is intended to place inspection emphasis on elements of licensee activities most important to reactor safety, radiation safety, and safeguards.

Because ROP uses PIs and inspection findings which are evaluated for risk to determine whether all cornerstone objectives were met at a plant, only those inspection findings which rise above a minimum significance threshold (i.e., findings are greater than minor) are documented in inspection reports. Therefore, inspection findings which are determined to be minor do not need to be nor shall be tracked or trended by either inspectors or regional managers. Instead, minor findings are to be reported to the licensee for action in accordance with the licensee's corrective action program. Licensees are expected to track and trend minor findings and issues as stated in their program. When implementing inspection procedure 71152, "Problem Identification and Resolution," inspectors may include minor findings and issues as part of their semiannual trend review. This review will determine whether the licensee has adequately identified and corrected an adverse trend, if any, resulting from all identified deficiencies, including minor findings, during the period of review. [C3]

Using a performance-based, risk-informed approach, inspectors focus their attention on activities important to safety. Performance-based inspection emphasizes observing activities and the results of licensee programs over reviewing procedures or records. For example, an inspector may identify an issue through observing a plant activity in progress, monitoring equipment performance, or the in-plant results of an activity (e.g., an engineering calculation). Discussions with plant personnel and reviewing documents should be used to enhance or verify performance-based observations. These procedures are designed to emphasize observation of activities, or those portions that are most risk significant in terms of safety and reliability. It is expected that resident and region-based inspectors will have the necessary technical capability to accurately observe and evaluate the activity.

Regional Division Directors and line managers must ensure that inspectors assigned to implement the baseline inspection procedures have the necessary training, knowledge, and skills to successfully implement the NRR programs. The inspector training and qualification program will be in accordance with IMC 1245, "Qualification Program for the Office of Nuclear Reactor Regulation Programs." The following baseline inspection procedures will normally be performed by regional specialists who have achieved at least Basic Certification in accordance with IMC 1245:

- *IP 71111.02, "Evaluation of Changes, Tests, or Experiments"*
- *IP 71111.05T, "Fire Protection"*
- *IP 71111.07B, "Heat Sink Performance"*
- *IP 71111.08, "Inservice Inspection Activities"*
- *IP 71111.11B, "Licensed Operator Requalification Program"*
- *IP 71111.12B, "Maintenance Effectiveness"*

- *IP 71111.17B, "Permanent Plant Modifications"*
- *IP 71111.21, "Safety System Design and Performance Capability"*
- *IP 71114, "Reactor Safety Emergency Preparedness" (all except attachment 06)*
- *IP 71121, "Occupational Radiation Safety" (all attachments)*
- *IP 71122, "Public Radiation Safety" (all attachments)*
- *IP 71130, "Physical Protection" (all attachments)*

The remaining baseline inspection procedures will normally be performed by resident inspectors who are at least basic certified. Additionally, based on their qualification and experience, regional specialists may also perform baseline inspections other than the ones listed above. Likewise, based on their qualifications and experience, resident inspectors may also perform baseline inspection procedures normally performed by regional specialists. [C2]

NRC inspectors perform a basic mission in determining whether a licensee operates the plant safely and meets current regulatory requirements and commitments. Limiting inspection to identification of specific instances where a licensee fails to meet such requirements and commitments could result in correction of symptoms rather than correction of underlying causes of licensee problems. The inspection and assessment processes establish thresholds for determining the significance of issues and whether those issues may require additional evaluation and follow up. Thus, the inspection program requires that inspectors and their managers evaluate problems to determine if follow up inspections are necessary to diagnose whether a safety concern represents an isolated case or may signify a broader, more serious problem based on the evaluated significance of the issues. Licensee management controls (e.g., QA, safety committees, etc.) may need to be examined to determine if weaknesses in these controls contributed to identified safety concerns.

The NRC inspection program covers only small samples of licensee activities in any particular area. The sample sizes specified in the inspection procedures are based on the relative importance of the area covered by the procedure to the other areas inspected by the program. They are also based on the inspectors choosing a "smart" sample instead of a statistically based random sample because the risk-informed nature of the inspection program requires the inspections to be focused on those aspects of plant operations and licensee activities that could pose the greatest risk to public health and safety. The philosophy behind this concept is that the licensee's processes are effective if they deal properly with the items of greatest significance. Some areas (such as reviewing 10 CFR 50.59 evaluations) do not have a direct connection with risk and inspection sample sizes in these areas are chosen to provide periodic indications of a licensee's performance in those areas.

08.02 Allocation of Resources as a Function of Performance Assessment. The results of plant performance assessments are an important factor in defining the inspection program for each plant. The baseline inspections are the level of defined requirements for all plants and additional regional supplemental inspections will be planned for plants whose performance is below a certain level, i.e., the licensee response band. The amount and focus of the additional supplemental inspections will be proportional to the plant's assessed performance and the nature of the issues that provide the indication of that performance.

See IMC 0305, “Operating Reactor Assessment Program,” for more detailed guidance on responding to issues with licensee performance.

Only baseline inspections, applicable generic safety issues, and special and infrequent inspections will be planned and conducted at plants whose overall performance (all performance indicators and inspection findings) is determined to be in the licensee response band.

Plants whose performance is determined to be outside of the licensee response band (see IMC 0305) should have supplemental inspections planned to examine the root causes of the change in performance and corrective actions of identified findings or safety issues that have indicated the performance change.

08.03 Allocation of Resources Among Program Elements. The allocation of resources among the three principal inspection program elements (baseline, supplemental, and generic safety issues) is provided for each year in the budget process.

08.04 Completion of Inspection Procedures. The baseline inspection procedures represent the inspection necessary to allow the NRC to assess performance. This means that the inspector is to perform the requirements most appropriate to the activity being inspected in each inspectable area by completing the number of inspection activities (samples) within the range of sample values specified in each inspection procedure, thus meeting the objectives of the procedure.

Performance of one inspection procedure sample may be counted as a sample for another procedure only if completed inspection requirements are common to each procedure. [C2]

The sample size may be reduced to a number below the minimum value in situations where there are an insufficient number of samples with appropriate risk significance available for inspection (e.g., a reduction of sample size to zero, if necessary, when no samples exist). Where no sample is specified, completion of all applicable inspection requirements constitutes completion of the procedure. The inspection hours estimate, which is included in the inspection procedure attachments for planning purposes, should not be used to determine whether the inspection attachment was satisfactorily completed. This estimate is intended to provide guidelines for inspection planning and budgeting.

Approval by the Director, Division of Inspection Program Management, NRR, is required when the inspection requirements in an inspectable area cannot be met. Likewise, each inspection requirement contained in the supplemental inspection procedures must be adequately addressed.

Inspection procedures identify requirements that the inspector must consider while evaluating the associated area. These requirements may not be the same as NRC requirements placed on a specific licensee. As such, it is not implied or intended that inspection program requirements are to be levied on the licensee. Any attempt to force inspection program requirements on the licensee constitutes misinterpretation of NRC inspection philosophy and misuse of inspection requirements.

Temporary instructions are issued for specific inspection purposes. For inspections performed using a temporary instruction, the inspector is expected to complete all inspection requirements listed.

08.05 Baseline Inspection Credit for Operational Safety Review Team Effort. The Operational Safety Review Team (OSART) review is performed by senior staff members from International Atomic Energy Agency member states. The OSART missions offer a means of assessing licensee performance and reinforcing plant self-assessments through an independent assessment process. OSART's focus on the safety and reliability of plant operation. They review the operation of the plant and the performance of the plant's management and staff rather than the adequacy of the plant's design and compliance with its licensing basis. Based on a review of sample OSART reports and the OSART guidelines, the staff determined that although the OSART review is not risk-informed, some areas of the review overlap with the ROP baseline inspection program. The NRC believes that it would be beneficial for the U.S. nuclear power industry to continue its participation in the OSART missions.

As an incentive to encourage licensee participation in the OSART mission, the NRC grant a one-time regulatory credit (reduction in baseline inspection program) for those NRC baseline inspections that overlap, either in part or fully, with the OSART review. Accordingly, a 25 percent ROP baseline inspection credit shall be given for the following baseline inspection procedures:

- IP 71111.22Q, "Surveillance Test"
- IP 71111.05Q, "Fire Protection"
- IP 71121.01A, "Access Control to Radiologically Significant Areas"
- IP 71121.02B, "ALARA Planning and Controls"
- IP 71121.03B, "Radiation Monitoring Instrumentation and Protective Equipment"
- IP 71122.01B, "Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems"
- IP 71122.02B, "Radioactive Material Processing and Transportation"
- IP 71122.03B, "Radiological Environmental Monitoring Program and Radioactive Material Control Program"

In addition, a 50 percent ROP baseline inspection credit shall be given for the following inspection procedures:

- IP 71114.03B, "Emergency Response Organization Augmentation"
- IP 71114.05B, "Correction of Emergency Preparedness Weaknesses and Deficiencies"
- IP 71152B, "Identification and Resolution of Problems/Issues"

In order for the region to take one-time credit for reducing baseline inspections, the areas for which the credit is to be given must have been documented in the OSART report. In addition, an NRC staff person should closely monitor the OSART activities, such as attending the team's briefings to the licensee. The staff person should assess whether the regulatory credit assumptions were appropriate. This person also needs a good understanding of the issues and recommendations made by the OSART. For NRC planning purposes, this effort is estimated to take approximately 40 hours. Also, the region should

assure that the OSART inspection report is made publicly available. Specific OSART findings should not normally be referenced or followed-up by the NRC, however, where a significant safety issue (potentially greater than Green) or a potential violation of an NRC requirement is identified, the NRC will independently conduct an appropriate baseline inspection to disposition potential violations and assess the significance of the finding in accordance with the ROP. These findings will be documented in accordance with NRC Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," and will also be processed as performance assessment inputs equivalent to NRC identified findings in accordance with IMC 0305, "Operating Reactor Assessment Program." The staff will perform any additional inspections for those findings that have a significance greater than Green in accordance with NRC's Action Matrix. The baseline inspection credit and NRC staff position described above are communicated to the Commission via a memorandum dated July 16, 2003 (Adams Accession Numbers: ML031620369, ML030930251, ML0316020346).

08.06 Baseline Inspection Program Completion and Documentation. The following guideline shall be followed when it is expected that required inspections for which the region is responsible will not be completed by the end of the calendar year:

a. *The missed inspection(s), if any, must be scheduled such that it will be completed during the first quarter of the next calendar year.*
b. *Inspection procedures which should be implemented during a refueling outage cannot be deferred.*
c. *Inspections may only be deferred at a plant in the licensee response column of the action matrix.*
d. *Acceptable reasons for deferring an inspection include unanticipated inspection resource demands resulting from providing additional regulatory attention to plants which are placed in the IMC-0350 process or in multiple/repetitive degraded cornerstone or unacceptable performance columns. (Refer to IMC-0305, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems," for a more detail explanation of these performance columns.)*
e. *The Director, Division of Reactor Projects (DRP) must notify the Director, Division of Inspection and Regional Support (DIRS), NRR, via a memorandum if the region cannot complete all the required inspections for which the region is responsible by the end of the calendar year. This memorandum should contain a brief explanation for the reason(s) for deferring the inspection(s), the proposed schedule for completing the deferred inspection(s), and the tracking method used for completing the required inspections.*

In addition, the regions must maintain an inspection tracking system which will allow them to track which inspections cannot be completed in the calendar year so that no more than four procedures are deferred for completion in the next ROP cycle. [C2]
The regions should use the guidance provided in IMC 0306, "Information Technology Support for the Reactor Oversight Process," to track the baseline inspection program completion for each calender year and to ensure that the inspection procedures not performed as required by year's end stay within the four-procedure allowance (but not more than one procedure not done per plant).

By mid-February of each calender year, the Director of DRP must notify the Director, DIRS, NRR, via a memorandum which states that the required baseline inspections for which the regions are responsible have been completed for the previous calender year inspection cycle in accordance with IMC 2515.

There are several baseline procedures related to plant security and safeguards which are scheduled, conducted, and tracked by the NRC Office of Nuclear Security and Incident Response (NSIR). The following resolutions were reached at a conference call among NRR, regions, and NSIR on March 27, 2006, as related to the baseline procedures for which NSIR is responsible:

- NSIR will issue a separate memorandum to the Director, DIRS, by mid-February of each calendar year certifying completion of the required baseline inspections for which NSIR is responsible.
- NSIR will be responsible for entering information into RPS for the baseline procedures which are conducted out of HQ from which NSIR is responsible.

A report that contains the data that support completion of the respective NSIR or regional required inspections (Report 8 from the Reactor Programs System, Item Reporting module) should be provided as an attachment to the memorandum submitted by NSIR and the regions.

08.07 Program Feedback. The reactor inspection program is expected to be dynamic and to respond to changes in the nuclear power industry and operational experience. Therefore, the program office expects the regions and inspectors to identify problems in implementing the program, and to recommend changes to the program for consideration by the program office. Any such feedback and recommendations should be submitted to IRIB through the associated regional office using the ROP feedback process (IMC 0801).

2515-09 INTEGRATED INSPECTION PLANS

Regional offices must develop annual site-specific inspection plans consistent with the inspection planning module of the Reactor Program System (RPS) to help manage inspection resources and monitor the inspection programs. Under circumstances where the operation of multiple units at a site is not comparable (e.g., Salem/Hope Creek), the inspection plan should be specific for each unit. The regional integrated inspection plan (i.e., the integration of individual site or unit plans) should project the planned inspection activities and available resources for all sites for at least the next 18 months. The integrated plan should also provide for a summary of the fraction of regional resources allocated to each of the individual program elements discussed in section 2515-06 of this manual chapter for each site.

Planning significant alterations to the baseline inspection program for a plant's annual inspection plan to accommodate the plant's particular situation needs the concurrence of the Chief, Inspection Program Branch. Significant alterations include treating a multi-unit site as separate single unit sites, or increasing or decreasing the frequency of inspections or sample sizes from those stated in the baseline inspection procedures. The factors to consider when planning alterations to the baseline inspection program at a plant site

include (1) known plant activities (or lack thereof), (2) the plant's size, design, and age, and (3) complexity of the licensee's programs.

The results of the end-of-cycle and mid-cycle performance reviews, conducted in accordance with IMC 0305, shall be used to schedule baseline inspections and to determine the amount and focus of planned supplemental inspections at each site. The basis for the allocation or significant reallocation of resources among the sites will be documented. It is expected that the integrated plans will be living documents and be reviewed periodically, adjusted, and reissued to reflect shifts in plant performance and safety concerns. Individual site plans and the regional integrated inspection plan should be reviewed by regional management and updated at least semiannually as part of the assessment process that is discussed in IMC 0305.

2515-10 INDEPENDENT INSPECTION

As a general rule, inspections should be conducted in accordance with inspection procedures. However, it is not possible to anticipate all the unique circumstances that might be encountered during the course of a particular inspection and, therefore, individual inspectors are expected to exercise initiative in conducting inspections, based on their expertise and experience and risk insights, as needed to assure that all the inspection objectives are met.

2515-11 INSPECTOR POLICY

11.01 Resident Inspector Policy. The resident inspectors provide the major onsite NRC presence for direct observation and verification of licensees' ongoing activities. Appendix D outlines the responsibilities of resident inspectors for being aware of major activities and the current status of the plant as NRC's onsite representative. The resident inspectors also are primary NRC onsite evaluators for events or incidents. See section 11.3, "Responding to Events and Event Reports," below. The greater part of initial event-related inspection effort will be performed by the resident inspectors, who may be augmented by other inspectors depending on the type and significance of the event. Regional managers will decide when normal inspection activities will be resumed by those involved with inspecting events.

The following is the general policy on the extent to which resident inspectors are to provide coverage at all sites with one or more units licensed for operation.

1. For sites with at least two resident inspectors, at least one resident inspector or qualified region-based alternate should provide site coverage during the regular NRC workday, Monday through Friday. The intent of this guidance is that site coverage by someone qualified as an inspector not be interrupted for more than three consecutive NRC working days (Friday-Tuesday are three consecutive working days). Consequently, for extended absences of the resident inspectors, such as for attending inspector counterpart meetings, arrangements should be made for coverage by region-based staff. The region-based inspectors should be qualified in accordance with IMC 1245, "Inspector Qualifications." However, when

qualified region-based inspectors are not available, site coverage can be provided by an individual that is both knowledgeable and experienced in plant operations, and capable of communicating with licensee and NRC management on emerging issues and plant conditions. In order to maximize NRC's efficiency, regional management should attempt to schedule region-based inspections for this time period.

2. The Regional Administrator will be notified when the guidance (3 consecutive working days) cannot be met. All exceptions will be highlighted in the quarterly update of the regional operating plan.

3. For sites with only a single resident inspector (e.g., because of a vacancy, training, or extended illness) the guidance described above should be followed to the maximum extent possible.

4. Inspections performed on Saturdays and Sundays, NRC holidays that are concurrent with licensee holidays, and weeknight hours between about 10:00 p.m. and 5:00 a.m., are called “deep” backshift inspections. There are no set hours for backshift inspections because it is expected that the baseline inspection program will involve some backshift coverage on a routine basis. Resident inspectors should collectively devote at least 50 hours of direct inspection and plant status effort per year per site to deep backshift inspections. (This is a combined effort; no hours are assigned to an individual resident inspector.) These efforts should be of at least several hours duration. If deemed appropriate by regional management, this coverage may be provided by regional inspectors in lieu of or in addition to that performed by resident inspectors. Credit may be taken for regional and headquarters inspection coverage in achieving deep backshift coverage goals. Inspection on holidays will count as deep backshift only if the licensee holiday is concurrent with the NRC holiday.

5. Inspectors should be sensitive to and avoid being predictable in scheduling their backshift and deep backshift coverage. In order to maximize the benefit of deep backshift coverage, inspectors should not develop a predictable pattern. Effort should be made to spread the deep backshift coverage over a variety of days and working conditions [outage, normal operations, weekends, nights (including 10 pm to 5 am), etc.].

6. There is not a specific goal for performing backshift inspections by regional inspectors, but backshift inspections should be performed whenever required to complete the intended scope of the inspection.

7. Regional administrators may permanently assign resident inspectors (RIs) to a site up to <u>twelve months</u> prior to the end of the tour of the incumbent inspector. This limited “early reassignment” of the resident inspector position, should minimize the interruption in inspector site coverage that often occurs during the transition of RIs.

   Regional administrators may permanently assign senior resident inspectors (SRIs) to a site up to <u>six months</u> prior to the end of the tour of the incumbent inspector. This limited “early reassignment” of the senior resident inspector position should

minimize the interruption in inspector site coverage that often occurs during the transition of SRIs. The “early reassignment” of SRIs should be minimized.

Personnel actions associated with individuals selected for early assignment will be the same as those who are assigned to the site to fill a vacant resident inspector position. However, the regions will use the personnel identification code “PIC” code “55" for SRIs and “PIC” code “56" for RIs for those who have been early assigned. The use of these “PIC” codes for the resident inspectors results in the administrative/overhead fees not being charged to the site. When the departing RI or Senior Resident Inspector (SRI) leaves the site, the regions will change the “PIC” code for the early assigned resident inspectors to “52" or “53,” as appropriate, within one pay period.

The regions should closely manage the inspection resources at the sites which are impacted by this program, such that the resources expended to complete the NRC’s baseline inspection program are not increased solely as a result of the additional resident inspector(s) being assigned to the site.

11.02 Regional Inspector Policy. Regional inspectors conduct inspections as directed by their supervisors. In addition to baseline inspection program procedures, regional inspectors often will conduct inspections under other program elements described in this chapter. Certain aspects of their inspection activity may be conducted in the regional office (e.g., portions of procedure review and administrative program inspection).

11.03 Inspection Coordination. The senior resident inspector and the regional Division of Reactor Projects must be kept advised of regional and headquarters inspectors’ activities at the facility. The associated regional branch chief must ensure coordination of regional and headquarters inspection activities in accordance with IMC 0301, "Coordination of NRC Visits to Commercial Reactor Sites."

Regional and headquarters-based inspectors should contact the senior resident inspector before each inspection to get information concerning the availability of specific licensee personnel and the status of plant conditions that may affect the planned inspection. In addition, they should contact the senior resident inspector as soon as is convenient after they arrive at the site to ensure a coordinated NRC presence at the facility. The visiting inspectors should advise the senior resident inspector of changes to their planned inspection effort and schedule for the exit interview with the licensee. The senior resident inspector should inform the regional and headquarters inspectors of any unique activities in progress and offer specific inspection suggestions. The regional and headquarters inspectors should brief the senior resident inspector about the results of their inspection before the exit meeting with the licensee’s management. The senior resident inspector (or resident inspector in his absence) should attend all exit meetings where significant issues are expected to be discussed.

11.04 Third Party Assistance. On occasion licensees ask inspectors for recommendations for obtaining help solving programmatic problems. Inspectors are prohibited from recommending the services of individuals or organizations for a project under NRC regulatory jurisdiction. Providing such a recommendation violates 5 C.F.R. 2635.702, which prohibits Federal employees from using public office for endorsement of any product,

service, or enterprise. For further information refer to the Executive Director for Operations' (EDO's) Field Policy Manual No. 19, "Guidance For Recommending Third Party Assistance to Licensees," which can found at the following Internet Web address: http://www.nrc.gov.

2515-12 GENERAL INSPECTION POLICIES

12.01 Management Entrance and Exit Meetings. Inspectors are required to meet with licensee management as part of every inspection. Region-based inspectors should hold an entrance meeting with the senior licensee representative who has responsibility for the areas to be inspected. Each inspection conducted by resident inspectors and region-based inspectors must include discussing inspection results with licensee management. At the conclusion of an inspection, inspectors must discuss their preliminary findings with the licensee's management at a scheduled exit meeting. Management and exit meetings with licensee personnel should be scheduled to have the minimum impact on other licensee activities necessary to assure the safe operation of the plant.

The duration of exit meetings, the level of detail involved in the meetings, and the level of interest of the licensee in the exit meeting (as manifested by the number of attendees or their positions in the licensee's organization) will vary from one inspection to another; however, the following guidelines should be considered when preparing for exit meetings:

- Throughout the inspection process, the principle of "no surprises" should be observed. Through a combination of regular communications during the course of the inspection and pre-exit status meetings (for those licensees who wish them) the licensee should have knowledge of the issues which will be summarized in the exit meeting before the meeting occurs.

- The inspection exit meeting is an NRC-led meeting convened to allow the inspector(s) to present preliminary inspection results to the licensee. As such, the NRC representative tasked with leading the meeting must maintain control of the meeting, ensuring that the discussion remains professional, on-track and efficient. The meeting must not be allowed to degrade into a technical debate, a lecture, or a discussion of non-inspection-related issues. If the NRC exit leader finds that the purpose of the exit meeting cannot be realized (due, for example, to an overly argumentative licensee), the meeting should be terminated and the appropriate NRC manager should be notified.

- The NRC representative tasked with leading the exit meeting may allow the licensee to record the exit meeting (either in audio or audio/video formats) provided the NRC is given a copy of the recording.

  - The exit meeting should be summary in nature. It is not necessary to go into great detail on inspection items that meet regulatory requirements; a statement describing the scope of inspection and reporting satisfactory performance can suffice.

  - The information presented at an exit meeting is predecisional in nature and subsequent management review of the inspection results may lead to

changes in the characterization of issues; this should be made clear at the outset of the meeting. The inspector should also point out that if changes are made in the characterization of issues, NRC will communicate the changes to the licensee prior to the issuance of the inspection report.

- When findings are involved, the exit meeting should include a description of the finding, and the standard which was not met. If there is a cross-cutting aspect associated with the finding, it needs to be presented at the exit meeting to ensure licensee awareness of the cross-cutting aspect.

- When discussing findings which are potentially greater than green, the inspector should communicate the results of the initial SDP evaluation or the information needed in order to assess the significance.

- If the licensee expresses strong opinions or disagreement with the characterization of an issue presented at the exit meeting, the inspector should inform regional management. Such a licensee response is not documented in the inspection report.

- If proprietary information is reviewed in the course of an inspection, the inspector should confirm with the licensee at the exit meeting that NRC has (or has not) returned proprietary materials used during the inspection.

Time spent on scheduled and periodic entrance and exit meetings (including preparing for the meetings) is considered part of preparation and documentation of inspections. Entrance meeting time is charged to preparation and exit meeting time is charged to documentation. Daily communication with licensee management is considered to be an integral part of every inspection procedure and the time used for such routine communications should be charged to the inspection procedures used.

Communicating inspection observations also is an integral and important part of every inspection, whether done daily during the course of an inspection, or periodically with status meetings. Many licensees have expressed the desire to hear inspector insights related to safety/regulatory performance even in instances where they do not reach the threshold for documentation in an inspection report (see IMC 0612, “Power Reactor Inspection Reports”). When deciding which observations and insights to pass on to the licensee, inspectors should consider the following:

1. Inspectors should share the same insights with their regional managers and the senior resident inspector.

2. The insights must relate to areas within NRC’s jurisdiction and responsibilities.

3. Comments should be objective and supported with examples when possible. Avoid generalizations such as “procedure adherence was good.” Instead, just state the objective facts: “Procedures were followed in each case we observed.” Negative observations or insights must be supported with specific examples.

4. Inspectors should not express an expectation for actions taken by licensee

managers. The inspector may comment on whether or not the actions comply with NRC requirements.

5. Inspectors should determine before the exit if the licensee wants to hear the observations and insights. If the licensee does not want the observations or insights at the exit meeting, the inspectors should not discuss them.

6. Inspectors should avoid "consulting" for the licensee and not advise them on how to improve draft documents or in-process work, or pass on to licensees how other licensees do the same thing.

12.02 Review of Updated Final Safety Analysis Report (UFSAR).

For planning inspections, several baseline inspection procedures specify reviewing applicable portions of the plant's UFSAR. This review is intended to provide the inspectors with design bases insights in preparing for inspections and is not intended to be a review of UFSAR accuracy. The general focus of the baseline inspection program is to monitor licensee performance, therefore UFSAR accuracy will not be routinely inspected, although it is a source of information for inspections.

However, the NRC does rely on the accuracy of the UFSAR in making informed licensing decisions on changes; therefore limited requirements for UFSAR accuracy may be incorporated into specific inspection procedures. Perform these inspection requirements as directed by the implementing procedure.

12.03 Responding to Events and Event Reports. Routine events of low significance, such as uncomplicated reactor trips, will be followed up by resident or region-based inspectors to verify that the events are not complicated by loss of mitigation equipment or other factors. This event follow up is part of the baseline inspection program, and emphasizes collecting information about the event for use by risk analysts in evaluating the risk significance of the event to help regional and headquarters management determine if a response beyond the baseline program is warranted.

The significance of operational events is evaluated using the Conditional Core Damage Probability (CCDP) metric, which best reflects the full extent of any loss of defense-in-depth due to the event, in conjunction with various deterministic criteria to address the most influential related assumptions and uncertainties. The significance is determined regardless of whether the cause is due to licensee performance or otherwise.

The agency's response to significant events is described in NRC Management Directive 8.3, "NRC Incident Response Program." In general, significant operational events may be investigated by multi-disciplined Incident Investigation Teams (IITs) that are initiated by the EDO, and are comprised of both regional and headquarters personnel. Operational events of lesser significance may be investigated by Augmented Inspection Teams (AITs) that are initiated by Regional Administrators. Regional Administrators may also initiate special inspection (SI) teams that use only regional personnel. The applicable procedures for AITs and SI teams are listed in Appendix C, "Special and Infrequently Performed Inspections." In addition, for an event of extraordinary safety significance or profound regulatory implications, an Accident Review Group may be formed that reports directly to the

Commission, as described in Management Directive 8.9, “Accident Investigation.”

Licensees often notify inspectors of events or conditions in anticipation of the inspectors’ interest in the issue, but such notifications do not exempt the licensee from reporting events and conditions through the required regulatory processes. The licensee should be made aware that documents that it gives to inspectors are subject to Freedom of Information Act requests and may be placed in the Public Document Room.

In addition to reviewing plant events to determine whether the NRC should devote additional effort and resources to respond to the event, the baseline inspection program screens for potential risk significance and possible future inspection all written event reports submitted to the NRC by licensees. The review should be acknowledged in an inspection report.

12.04 Findings Outside of Inspector’s Qualifications. Inspectors sometimes identify issues or violations outside of the inspector’s qualifications or expertise. In these cases the inspector is responsible for (1) determining if an immediate threat to public or worker health or safety exists, and if one does exist to notify licensee management immediately, (2) determining if the issue is better addressed by an inspector with different qualifications (i.e., a specialist inspector). Inspectors may follow issues outside of their qualifications or expertise with the concurrence of a regional manager responsible for the area associated with the issue and the inspector’s supervisor.

Such issues are associated with the most applicable cornerstone and inspectable area, regardless of the baseline inspection procedure in use when the issue is identified. The inspector’s time associated with the issue is charged to the baseline procedure that best corresponds to the issue. If the issue is found during inspections other than baseline inspections, the time is charged to the procedure in use.

12.05 Communication With Local Public Officials. *As a matter of management philosophy, the NRC maintains an “open door” policy with regard to access by the public or state and local officials to the NRC staff or to publicly available electronic documentation concerning a licensee's performance. Some local officials may desire increased interaction with the NRC's regional offices and Resident Inspectors. The degree of interaction that is considered necessary to enhance openness in the NRC is expected to vary widely dependant upon the situation at each plant. In each case where inspectors are utilized for this purpose, regional management must carefully balance the use of inspection resources to complete inspections with the need to enhance openness. Any meeting between local emergency preparedness officials and the NRC must be coordinated with the Federal Emergency Management Agency (FEMA) in accordance with the Memorandum of Understanding between FEMA and the NRC*. [C1]

2515-13 POST-LICENSE RENEWAL INSPECTIONS

13.01 Post-License Renewal Inspection Effort. Inspection Procedure 71003, “Post-Approval Site Inspection For License Renewal,” is to be implemented to verify that license renewal programs and activities have been implemented in accordance with the requirements of Title 10 of the Code of Federal Regulations, Part 54. This inspection will

be performed as a team inspection effort and will be performed just once per unit. For that reason IP 71003 is listed in Appendix C to this manual chapter.

13.02 Budget Planning. IP 71003 is not part of the baseline inspection program and is not budgeted as part of the baseline inspection program. Therefore, to ensure that inspector resources are available to complete this IP when required, planning for its performance must be projected a minimum of three years in advance of the fiscal year in which it is planned to be used.

2515-14 INSPECTION PROGRAM MODIFICATIONS IN EVENT OF A PANDEMIC

In the event of a pandemic, the NRC's Pandemic Response Plan (PRP) requires that aspects of the inspection program, identified as priority functions, be maintained. Additionally, the NRC's PRP allows modifications to less critical aspects of the inspection program in order to address limited inspection resources.

Therefore, "supplemental" and "generic safety" inspections may be postponed when authorized by the regional administrator. Baseline inspection activities may be reduced commensurate with available inspection and licensee resources. Inspections of reactor and security events (e.g., special inspections, AITs, and IITs) will continue. If necessary, the baseline inspection program will be reduced such that only monitoring of key plant parameters and activities will be performed by inspectors, if available, or by remote means, if no inspectors are available. Normal inspection activities will resume once the pandemic has passed and reasonable efforts will be made to complete missed baseline inspection activities before the end of the calendar year. Appendix E of this IMC provides additional background and basis for these actions and implementation details.

END

Appendices:

A. Risk-Informed Baseline Inspection Program
B. Supplemental Inspection Program
C. Generic, Special, and Infrequent Inspections
D. Plant Status
E. Inspection Program Modifications in the Event of a Pandemic |

ATTACHMENT 1

Revision History - IMC 2515

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
C1	07/09/2002	Revised to add a new section (12.05) which provides guidance on increased communication between the regional offices/resident inspectors and local public officials. This change was made specifically to satisfy a commitment made by NRR to resolve a concern which arose following the IP2 tube rupture event where the local county official wanted increased communication with the resident inspectors.	NO	N/A	N/A
N/A	01/24/2003	Revised to add a section 04.07 to define baseline inspection program completion for an ROP annual inspection cycle. Section 13.02 was also added to discuss budget planning to perform IP 71003, “Post-Approval Site Inspection for License Renewal.”	NO	N/A	N/A

N/A	02/02/2004	Revised to reflect recommended changes to define the periodicity of biennially and triennially. The section of inspection policy has been revised to allow early assignment of replacement senior and resident inspectors to a site to prior to the end of the tour of the incumbent inspector.	NO	N/A	N/A
N/A	03/30/2005	Revised to reflect the inspection program policy regarding baseline inspection credit for Operational Safety Review Team Effort as described in memorandum addressed to the Commission dated July 16, 2003.	NO	N/A	N/A

C2	07/28/2005	Revised to address recommendations from a Office of Inspector General's audit of the NRC's baseline inspection program (OIG-05-06): - provided basis and rationale for the baseline inspection procedure sample size, including a discussion of when, or why, to use more than minimum samples. - provided additional management guidance for assigning inspectors to perform inspection procedures to ensure that inspectors are adequately qualified for their assignments. - improved inspection guidance on whether performance of one inspection procedure sample can be counted as a sample for another. - clarified expectations and requirements for which inspection procedures cannot be deferred, plants where procedures cannot be deferred, criteria for deferring a procedure and reporting requirements when inspections are deferred. - added a program requirement for regions to maintain an inspection tracking system so that no more than four inspection procedures are deferred in a calendar year.	NO	N/A	N/A

C3	11/28/2005	Revised to address recommendations from a Office of Inspector General's audit of the NRC's baseline inspection program (OIG-05-06): Revised to clarify a ROP program expectation that inspection findings which are determined to be minor do not need to be nor shall be tracked or trended by either inspectors or regional managers.	NO	N/A	N/A
N/A	01/26/07 CN 07-004	Revised to address changes to the inspection program in the event of a pandemic and to clarify baseline inspection program completion reporting requirements by the regions and NSIR. Completed 4 year historical change notice search.	NO	N/A	ML063460228
N/A	09/20/07 CN 07-029	IMC 2515 has been revised to add additional guidance on the conduct of exit meetings.	NO	N/A	ML071560246