**NRC INSPECTION MANUAL** IRIB

|  |
| --- |
| INSPECTION MANUAL CHAPTER 2515 APPENDIX G |

BASELINE INSPECTION GUIDANCE FOR POWER REACTORS PREPARING FOR TRANSITION TO DECOMMISSIONING PHASE

2515G-01 PURPOSE

This appendix provides guidance and is not a program requirement, to the regional staff for nuclear power licensees preparing to transition from an operating power reactor to a decommissioning reactor facility. The guidance is specifically for the period that occurs prior to the transition from oversight in accordance with Inspection Manual Chapter (IMC) 2515, “Light-Water Reactor Inspection Program (ROP) - Operations Phase,” ROP inspection program to IMC 2561, “Decommissioning Power Reactor Inspection Program.”

2515G-02 BACKGROUND AND OBJECTIVES

The NRC staff developed this guidance using lessons learned from nuclear power plants that have permanently ceased operation (e.g., Vermont Yankee (VY), Kewaunee, Crystal River (CR), and San Onofre Nuclear Generating Station(SONGS)) and are now being inspected and assessed under IMC 2561. The guidance applies for the period that occurs prior to the transition of oversight from the ROP to IMC 2561, “Decommissioning Power Reactor Inspection Program.” The attachments to this appendix provides recommendations on potential adjustments to the inspection activities that can be used to perform a more detailed assessment of performance in areas potentially impacted by the impending shutdown.

Attachment 1 – SUGGESTED INCREASE IN NUMBER OF INSPECTIONS PERFORMED FOR THE FOLLOWING AREAS

| IP Number | Title/Section | Comments/Basis for Adjustment | Associated IMC 2561 Decommissioning Inspection Procedure |
| --- | --- | --- | --- |
| 71111.04Q | Equipment Alignment/Partial | Attrition in staffing levels and reduction of craft skill.  For example, at SONGS, non-licensed operators (NLO) were eliminated and the licnessed operators assumed the role of the NLO outside the control room (e.g. equipment manipulations, tagouts, log keeping). Ensure licensed operators could perfom their newly assumed duties that resulted from the staff reduction. | IP 60801 & IP 71801 |
| 71111.04S | Equipment Alignment/Complete | Attrition in staffing levels and reduction of craft skill. | IP 71801  Review SFP system or a SFP support system |
| 71111.11Q | Licensed Operator Requalification | Increase the Control Room (CCR) observation, as staffing challenges may arise which may require Senior Reactor Operator (SRO)s taking Reactor Operator (RO) watches (this was the case at VY).  Increase observation inside and outside the CCR as well as CCR observation during plant maneuvering or complex surveillances. | IP 41500 (Training and Qualification Effectiveness) &  IP 71801 |
| 71111.15 | Operability Determination and Functionality Assessments | Towards the end of the year, additional operability reviews for deferred maintenance, skipped surveillances, and degraded conditions that are accepted as-is. If engineering loses personnel and becomes short staffed, the quality of the engineering input could degrade for operability evaluations. |  |
| 71111.18 | Plant Modifications | Increasing corrective maintenance backlogs  Decrease in problem identification and/or resolution.  This can result in an increase in active temporary modifications | IP 37801 Safety Reviews, Design Changes, and Modifications |
| 71111.22 | Surveillance Testing | Attrition in staffing levels and reduction of craft skill. | IP 61726 Surveillance Observation |

Attachment 2 – SUGGESTED DECREASE IN NUMBER OF INSPECTIONS PERFORMED FOR THE FOLLOWING AREAS

| IP Number | Title/Section | Comments | Decommissioning Inspection Procedure as Applicable |
| --- | --- | --- | --- |
| 71111.06 | Internal Flood Protection Measures | Submerged cables for structures, systems and components (SSC) that will be taken out of service will not pose risk |  |
| 71111.07A | Heat Sink Performance | Consider Spent Fuel Pool (SFP) Heat Exanger (HX) or Containment Spray HX |  |
| 71111.12 | Maintenance Effectiveness | Consider 1 annual maintenance effectiveness review on an equipment issue or system important to spent fuel safety  Review deferral of preventative maintenance and surveillance tests  Attention to increasing corrective maintenance backlogs | IP 62801 Maintenance Rule |
| 71111.13 | Maintenance Risk Assessment & Emergent Work Control | Given the reduction or elimination of preventive maintenance work and planned work windows removing systems from service, there will be few planned maintenance work activities for which management of risk will be valuable sample. The noted flexibility takes into Account that emergent activities will continue to be a focus area. |  |
| 71111.19 | Post Maintenance Testing | Number of maintenance activities will decrease |  |
| 71114.06 | EP Drill Evaluation | As the staffing challenges arise ensure adequate staffing for Emergency response |  |

Attachment 3 – NO CHANGES IN NUMBER OF INSPECTIONS PERFORMED FOR THE FOLLOWING AREAS

| IP Number | Title/Section | Comments | Decommissioning Inspection Procedure as Applicable |
| --- | --- | --- | --- |
| 71111.01 | Adverse Weather | Hurricane season  Cold weather preparation |  |
| 71111.05A | Fire Drill |  |  |
| 71111.20 | Refueling and Outage Activities | Verify SFP Foreign Material Exclusion (FME) controls and SFP protection | IP 60801 Spent Fuel Pool Safety at PSRs |
| 71151 | Performance Indicator Verification |  |  |
| 71152 | Problem Identification & Resolution | Consider focus on maintenance backlog and preventive maintenance history | IP 40801, Self-Assessment, Auditing and Corrective Action for Decommissioning |
| 71153 | Event Follow up |  |  |
| IMC 2515, App D | Plant Status | Focus on SSCs necessary for the safe storage of spent fuel including security, radiation protection, and emergency preparedness  Periodically discuss with licensee representatives the status of decommissioning activities, problems encountered, and performance insights | IP 71801 Decommissioning Performance and Status Review |

Attachment 4 - BASELINE INSPECTION PROGRAM TEAM INSPECTIONS:

In addition to the inspection procedures that Resident inspectors complete, baseline inspections continue to be conducted by the regional inspectors such as engineering, radiation protection, emergency preparedness, operator licensing, and security with focus including but not limited to the following:

* Samples of licensee evaluation and response to License Amendments, Generic Letters, Bulletins and Information Notices after shutdown announcement
* Potential degradation to radiological controls including increase in dose and area of contamination on site
* Evaluation of In Service Inspection deferrals
* Security IPs remain as scheduled until all spent nuclear fuel (SNF) is removed.
* Availability of emergency facilities, staffing and operability of emergency sirens
* For Component Design Basis Inspection (CDBI), IP 71111.21,”Component Design Bases Inspection,” if the target date for the permanent shutdown is more than 3 years in the future, the next CDBI should occur as normally scheduled within the current triennial period (sample examples: standby fuel pool cooling system (pump, pump motor and heat exchanger), normal fuel pool cooling system isolation valve, review of corrective action for NRC Information Notice (IN) 2009-26 – Degraded Neutron Absorber in the Spent Fuel Pool, NRC IN 2011-03 – Non-conservative Criticality Safety Analyses for Fuel). If the target date for the permanent shutdown is less than 3 years in the future, the Region (in consultation with NRR/DIRS) should consider either cancelling the inspection or combining the CDBI with evaluations of changes, tests or experiments and permanent plant modifications (IP 71111.17T, “Evaluations of Changes, Tests and Experiments and Permanent Plant Modifications”). Combining the inspections allows flexibility for sample selection to the inspectors for covering CDBI and Plant Modifications.
* A Biennial Problem Identification and Resolution (PI&R) Inspection, if it falls in the last year of the shutdown cycle, the region can consider reduced scope of the inspection. A decreasing trend for identifying issues and correcting them in a timely manner may be evaluated by the resident inspectors routinely.
* Consideration should be given to other baseline team inspections performed on a biennial and triennial basis for performance/scope increase or decrease as mentioned in the above CDBI and PI&R discussions.

| IP Number | Title/Section | Last year | Total Inspection Hours | Decommissioning Inspection Procedure as Applicable |
| --- | --- | --- | --- | --- |
| 71114.01-.04 | Exercise Eval  Emergency Action Level (EAL) Emergency Preparedness (EP) changes | Continue as scheduled until certification of permanent removal of fuel | IAW IP | IP 88XXX Emergency Preparedness |
| 71130.0X | Security Baseline Inspection | Continue as scheduled until certification of permanent removal of fuel | IAW IP | IP 81200, Security |
| 71124.0X | Radiation Protection (RP) Inspections | Continue as scheduled until certification of permanent removal of fuel | IAW IP | IPs 83750, 84750, 86750 may be used as additional guidance during transition |
| 71152B | Problem Identification and Resolution, Biennial Inspection | Recommend Reduced Scope | 212-228 hours |  |
| 711111.17T | Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications | Recommend increased sample size due to increase number of temporary modifications | 172-212 hours (Maximize) | IP 37001 (Facility Modifications), IP 37700 (Design Changes and Modifications) |
| 71111.21 | Component Design Basis Inspection | Not Recommended or combine with Plant Modification | 408 hours (+/- 15%) |  |
| 71111.05T | Triennial Fire Protection Inspection | Adjust schedule and scope based on licensee’s schedule of decommissioning activities | IAW IP | IP 64704 (Fire Protection Program) |
| 71111.08 | In-Service Inspection | Not Recommended | 30-42 for Boiling Water Reactor (BWR)  80-100 for Pressurized Water Reactor (PWR) |  |
| 71111.11 | Operations Training | Recommend in the 1st two Quarters (QTR)s to ensure adequate staffing and training | 96 hours |  |
| 71130.11 | Material Control and Accountability Inspection | If it is in the last year of the transition cycle use the guidance of IP 85102 from IMC 2561 | IAW IP | IP 85102 (Material Control and Accounting – Reactors) as part of IMC 2561 |

END

Attachment 5

Revision History for IMC 2515 Appendix G

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Commitment Tracking Number | Accession Number  Issue Date  Change Notice | Description of Change | Description of Training Required and Completion Date | Comment and Feedback Resolution Accession Number  (Pre-Decisional, Non-Public) |
|  | ML15183A264  02/01/16  CN 16-004 | Initial issuance. Researched commitments for four years and found none. Created to provide guidance to the regional staff for nuclear power licensees preparing to transition from an operating power reactor to a decommissioning reactor facility |  | ML15188A020 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |