INSPECTION PROCEDURE 88070

PLANT MODIFICATIONS

Effective Date: 05/06/2026

PROGRAM APPLICABILITY: IMCs 2600 B, 2630 A, 2694 A, 2696 A

This procedure provides guidance for inspection of changes and modifications of fuel cycle facilities, as applicable.

88070-01 INSPECTION OBJECTIVES

Verify the licensee has established and implemented a configuration management system (CMS) to evaluate, implement, and track changes to the facility in accordance with the requirements in Title 10 of the U.S. Code of Federal Regulations (10 CFR) Section 70.72 (if applicable) and the licensing basis of the facility.

Verify the licensee has established management measures for changes to the facility in accordance with 10 CFR 70, Subpart H (if applicable) and the conditions of the license to ensure that safety-related systems and components (e.g., Items Relied on for Safety (IROFS)) can perform their intended safety function.

Verify that design issues or system changes have not adversely impacted plant safety and operability.

Verify that modifications involving new processes at existing facilities meet the requirements in 10 CFR 70.64.

88070-02 INSPECTION REQUIREMENTS AND GUIDANCE

02.01 Sample Selection

a. Inspection Requirements

Select a sample using either the system-based approach, programmatic approach, or a combination of both.

- Programmatic Approach: different types of plant changes/modifications performed since the last plant modifications inspection, to verify the licensee is conducting evaluations according to the CMS required in 10 CFR 70.72 and/or the license conditions.
- System Based Approach: select an area, process, or system and review all changes over an applicable timeframe (e.g., since installation, since the last major re-design, etc.).

b. Inspection Guidance

The implementation of this procedure starts with selecting changes or modifications to review in accordance with the subsequent requirements in this procedure.

1. For the programmatic approach, the annual summaries of changes (required by 10 CFR 70.72 (d)(2) and (d)(3), or as stated in the license) are generally the best starting point for the sample selection. Consider specific recommendations from the project inspector, project manager, and resident inspector (if applicable) for the sample of changes that were initiated or implemented since the last plant modification inspection.

   During selection, prioritize modifications which impact safety controls, however, also obtain samples (as appropriate) in different types to verify the licensee properly implemented a graded approach to reviews. Consider recent examples of the following types of changes for the sample selection:

   (a) "Major modifications" that involved the design of new processes at existing facilities (per the licensee's definition of major modification, which are different from the NRC's definition in IMC 2600),

   (b) Hardware or field changes potentially involving IROFS or credited safety controls,

   (c) Software modifications potentially related to licensed material,

   (d) Minor or administrative modifications that did not trigger in-depth reviews,

   (e) Procedure changes for operations potentially related to licensed material,

   (f) Like-for-like replacements of hardware (fit, form, and function),

   (g) Temporary modifications,

   (h) Changes that impacted the Integrated Safety Analysis (ISA) Summary,

   (i) Changes made to the license application (both approved by the NRC and those not submitted to the NRC under a license amendment),

   (j) Changes for which post modification testing, change meetings, etc., are conducted while the inspectors are onsite.

During inspection preparation, request the following program procedures from the licensee (as applicable to the samples selected):

   (a) CMS as required by 10 CFR 70.72 (or change process described in the facility's license)

   (b) post-modification testing

   (c) audits

   (d) training and qualification

(e) records retention

(f) license application change process (if any)

2. For a system-based approach or combined approach, first consider process age and scale the system or systems selected as a sample accordingly. For facilities, areas, processes, or specific equipment that have been operating for a long time (on the order of a decade or more) a narrower sample is recommended to compensate for the increased amount of changes that were implemented over that time period. At a newer facility an appropriate sample may be a whole area, while at an older facility a single process or selected equipment may be an appropriate sample.

   When reviewing pre-subpart H changes, take into consideration the changes in regulatory requirements for change management.

02.02 Facility Change/Modification Process

a. Inspection Requirements

Change process.

1. Verify that the licensee is implementing their CMS as described in the license application, supporting procedures, and as required by Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) Section 70.72, "Facility Changes and Change Process," and 70.62(d), "Management Measures." Also verify that modifications selected for inspection addressed the following aspects prior to implementing any change:

   (a) The technical basis for the change;

   (b) Impact of the change on safety and health or on the control of licensed material;

   (c) Modifications to existing operating procedures including any necessary training or retraining before operation;

   (d) Authorization requirements for the change;

   (e) For temporary changes, the approved duration (e.g., expiration date) of the change; and

   (f) The impacts or modifications to the ISA, ISA Summary, or other safety program information developed in accordance with 10 CFR 70.62.

2. Verify the licensee's evaluation of changes properly determined whether an amendment to the license was required based on the criteria in 10 CFR 70.72(c). If a license amendment was required prior to the implemented change, the licensee submitted an amendment request to the NRC in accordance with 10 CFR 70.34 and 10 CFR 70.65. Or, for changes that did not require NRC pre-approval and/or affect the ISA Summary, that the licensee submitted a brief summary of changes and revised ISA Summary pages in accordance with 10 CFR 70.72(d).

3. Verify affected documentation associated with the selected changes was updated promptly in accordance with 10 CFR 70.72(e) or the conditions of the license.

4. Verify minor or administrative modifications were properly classified in accordance with license application and/or procedural requirements.

Design process.

5. Review the ISA, the ISA Summary, license application, and other safety analyses or program information to verify compliance with the baseline design criteria of 10 CFR 70.64, and whether the safety system designs met the performance requirements of 10 CFR 70.61.

   NOTE: The baseline criteria in 10 CFR 70.64 only applies to new facilities and new processes at existing licensees, and does not require retrofits to existing facilities or existing processes (e.g., those housing or adjacent to the new processes). For existing facilities and processes, review design information and safety analyses to verify compliance with required design criteria.

6. Verify that the system and components will function as required and support proper operation of associated systems. Verify the appropriateness of design assumptions contained in the modification package and associated design documents. Determine if the licensee verified the design assumptions.

7. Verify that design bases, licensing bases, and performance capability of IROFS have not been degraded through cumulative modifications.

   Perform the following steps when appropriate for the system(s) selected, the available inspection resources, and based on the best risk information available.

8. As appropriate, verify interfacing or interconnecting systems have not been adversely impacted by modifications, as well as no adverse impacts to the ISA or safety program information as required by 10 CFR 70.72(a)(6).

9. As appropriate, review past, open, deferred, and cancelled corrective maintenance work requests/orders and design change requests for the selected system over the review period to verify that the licensee is adequately addressing maintenance and/or design issues. (As applicable) Review a selection of open/deferred or cancelled engineering action items (e.g., corrective maintenance work requests), temporary modifications, operator workarounds, and items that are tracked by operations, maintenance, or engineering departments for design or operational deficiencies. Verify if there are any known or identifiable instances of the system being operated outside of its normal/as-intended configuration.

10. As appropriate, verify that modifications do not invalidate the natural phenomena hazards (NPH) structural analysis/evaluation (required to comply with 10 CFR 70.62(c)(iv)) that applies to the buildings or equipment.

11. As appropriate, verify, for the modification, the organizational structure meets associated regulatory requirements and any training requirements are met.

b. Inspection Guidance

1. This inspection requirement is focused on the implementation of the licensee's CMS to verify compliance with 10 CFR 70.72, 10 CFR 70.62, and/or the applicable change

process described in the license. Review the license application and suite of engineering and configuration management procedures that govern the plant modifications program. Verify that the procedures are followed with particular emphasis on the following topics: (1) technical justification, (2) interdisciplinary safety reviews and approvals, (3) 10 CFR 70.72 screening and evaluation, (4) authorization/approval, (5) modification type, (6) validity of design assumptions, (7) post-modification testing, (8) document/ISA updates, and (9) training. As applicable, verify the licensee's procedures and the modifications selected for inspection addressed the following aspects:

(a) Technical basis for the change. The technical basis should provide (1) an explanation of the proposed change, (2) what is to be changed and how, and (3) whether the change adversely impacted safety. The level of detail in the document should be commensurate with the complexity and safety significance of the change. For example, a minor change with little or no safety impact may only require a simple qualitative explanation. However, for more complex changes, it may be necessary to develop calculations, technical reports, and safety evaluations to serve as the technical basis for the change. At a minimum, there should be enough information available to allow appropriate supervisory, management, technical, and regulatory review of the change to verify that it will not adversely impact nuclear or chemical safety or provide a basis for why such adverse impact is acceptable.

(b) Impact of the change on safety and health or control of licensed material. Verify the licensee adequately evaluated each change and reached the proper conclusion as to whether the change could be made without prior NRC approval.

(c) Modifications to existing procedures including any necessary training or retraining before use. Verify, the licensee has updated the affected procedures and conducted required training on the modified procedures prior to beginning operations. Review a sample of training records for specific changes to assess whether the level of training provided is consistent with the training requirements in the license.

(d) Authorization requirements for the change. Review the licensee's CMS implementing procedure(s) to verify they include required authorization requirements for plant changes. Plant modifications are typically reviewed by impacted safety groups such as nuclear criticality safety (NCS), emergency preparedness, environmental protection, fire protection, chemical safety, ISA, licensing, radiological protection, and operations prior to authorizing the change. The purpose of the review by impacted safety groups is to (1) concur on the change, (2) identify potential impacts to the safety or licensing basis, and (3) identify action items and documents that will require revision in support of the change. Authorization is typically documented on a work clearance permit or other similar form or may take the form of signature or a time/date stamp in a CMS software program. For the changes reviewed, verify action items identified by the review process were completed prior to field implementation.

(e) Approved duration of temporary changes. Verify that temporary changes include an approved duration/expiration date. The CMS procedures may allow extensions to temporary modifications with the proper approvals and justification.

As applicable, verify that approved durations were specified and any extensions were properly authorized in accordance with the licensee's procedure.

(f) Impacts or modifications to the ISA or other safety program information. Verify the licensee's CMS includes an evaluation to verify that the change results in an impact to the ISA Summary and other applicable documents that are part of the safety program. This evaluation may be documented on a 10 CFR 70.72 evaluation form. Safety program documents that could be impacted by modifications include procedures, drawings, technical documents, engineering calculations, process hazard analysis (PHA), and training plans/materials. There may also be questions to determine if the change impacts other licensing basis documents such as the Emergency Plan, Fundamental Nuclear Material & Control Plan (FNMCP), Quality Assurance Plan (QAP), and the license application. Review the modification package for the selected facility changes to verify impacted documents were properly identified.

2. For selected modifications that did not require prior NRC approval in a license amendment (See NRC Regulatory Guide (RG) 3.74, "Guidance for Fuel Cycle Facility Change Processes," for additional guidance), verify that the licensee's evaluation provided valid technical basis to demonstrate the following criteria from 10 CFR 70.72 were met:

   (a) No sole IROFS preventing or mitigating an accident sequence that exceeds the performance requirements of 10 CFR 70.61 was altered.

   (b) IROFS needed to meet the performance requirements of 10 CFR 70.61 were not removed, without an equivalent replacement of its safety function.

   (c) No new process, technology, or control system were implemented that has not been evaluated by the licensee.

   (d) No new types of accident sequences that require IROFS were created that were not already described in the ISA.

   Based on the guidance contained in RG 3.74, it is acceptable for 10 CFR 70.72 evaluations to take the form of a simplified "yes/no" checklist unless the change is directly associated with one of the 10 CFR 70.72 evaluation criteria listed above. For example, changes to a sole IROFS should demonstrate that the change is not an alteration (i.e., the change will not modify, positively or negatively, any of the attributes associated with the safety function of the IROFS). The justification for answering "no" should be clearly documented in the 10 CFR 70.72 evaluation and simply checking the box "no" would not be an acceptable response. The inspectors should use the guidance contained in RG 3.74 to assist them in their review of 10 CFR 70.72 evaluations. In addition, verify that the 10 CFR 70.72 evaluation properly concluded whether NRC pre-approval of the change was required.

   Lastly, verify that, if a license amendment was required, the licensee submitted an amendment request to the NRC in accordance with 10 CFR 70.34 and 10 CFR 70.65. Or, for changes that did not require NRC pre-approval and/or affect the ISA Summary, verify that the licensee submitted a brief summary of changes and revised ISA Summary pages in accordance with 10 CFR 70.72(d).

3. Verify the licensee's CMS procedure requires that on-site documentation affected by a change performed under 10 CFR 70.72 is updated promptly. For the purpose of this procedure, "promptly" generally means within the timeliness expectations established in the CMS procedures. As required by 10 CFR 70.72(a)(3), operating procedures shall be updated prior to implementation of the change.

4. For minor/administrative modifications, verify that the scope of the modification was minor in nature and consistent with the licensee's definition and does not in any way involve IROFS/safety controls, or impact the ISA. The purpose of this review is to make sure that licensees are properly classifying minor changes because minor changes do not typically receive the same level of interdisciplinary reviews or documentation as other types of modifications.

   Design process. (The following guidance applies primarily to modifications sampled as part of the system-based approach.)

5. For the system(s) selected, review the process safety information developed and evaluated in accordance with the licensee's safety program (e.g., PHA revisions performed in support of the modification) as it relates to the changes being evaluated, and compare identified hazards with the actual installed equipment to verify whether other hazards should have been considered. Consider using a generic PHA checklist. Verify that license requirements with respect to the performance of PHAs were followed such as team/team leader qualifications, proper use of hazards analysis techniques, and team composition.

6. For the selected modifications, review the modification package and related design documentation such as technical descriptions, specifications, nuclear criticality safety evaluations (NCSEs), PHAs, boundary definition documents, research/test reports, design reviews/reports, set point documents, drawings, codes and standards, vendor manuals, company engineering standards, and calculations to verify whether the licensee properly justified design assumptions. In general, the licensee should not be relying solely on engineering judgement as the basis for the change. The inspectors should verify that the licensee provided an adequate technical basis for the change as required by 10 CFR 70.72(a)(1). Examples of items that should be addressed include: (1) an explanation of the proposed change, (2) what is to be changed and how, and (3) whether the change adversely impacted safety. At a minimum, there should be enough information available to allow appropriate supervisory, management, technical, and regulatory review of the change to verify that the change will not adversely impact safety or provide a basis for why such adverse impact is acceptable. If necessary, the inspectors should interview system engineering and ISA engineers to discuss any design assumptions that are not properly justified.

7. Perform a holistic assessment of all selected modifications (including modifications made to interfacing or interconnecting systems) to verify that the cumulative changes have not adversely impacted system operability or IROFS design/safety bases.

   For example, a process, procedural, or even training change (including temporary changes) in the pellet grinding area that results in additional grinding dust could result in the potential for additional material holdup in the process ventilation system. Changes to the type of characteristics of the material being handled could also cause downstream effects. As needed, the inspectors should interview system/design

engineers to discuss the scope of the modifications and their impact on the design/safety bases. Interview operations personnel to verify if there are any problems with system operation. Review applicable process safety information and conduct walk downs as necessary. The purpose of the holistic assessment is to consider the overall impact on system operation and the safety basis of the changes being reviewed. The inspectors may use a generic process hazards checklist to aid in verifying that the cumulative impact of the changes has not introduced any new unanalyzed conditions or safety concerns.

Perform the following steps, when appropriate, for the system(s) selected, based on the available inspection resources and best risk information available.

8. As appropriate, the inspectors should interview licensee staff and/or review P&IDs, NCSEs, technical descriptions, and other technical documents to identify systems that interface with the system selected for review. The inspectors should review any significant changes made to interfacing systems to verify that changes have not adversely impacted system operation or introduced any new or unanalyzed accident sequences.

   For example, the licensee may have implemented a modification to reroute the air supply source for a process enclosure from instrument air (dry air) to plant air (moist air) which significantly increases the potential for moisture carryover and criticality in the enclosure. The licensee should have evaluated this potential accident scenario in the NCSE and ISA and provided the necessary controls to ensure that a criticality will not occur under both normal and credible abnormal conditions. Another potential downstream consideration includes potential HEPA filter breakthrough due to excessive moisture which could result in high carryover. Specific to design assumptions, the licensee may have made an argument that no significant carryover was expected as a result of the change. This is an example where the licensee should provide objective evidence to substantiate this assumption such as by calculation, test, system configuration, or operational history.

9. As appropriate, request a descriptive list of corrective maintenance work requests/orders for the selected review period to verify that the licensee is adequately addressing maintenance and/or design issues. The description of the corrective maintenance work performed should be sufficient to allow understanding of the type of work performed. If it is not detailed enough, then the actual work orders may need to be reviewed. Pay particular attention to repetitive or similar maintenance work requests which could be an indicator of a design deficiency and could affect the ability of the components to perform their intended functions. Verify that the licensee's preventive maintenance is being reasonably effective in preventing component failures.

   In some cases, the licensee may keep a list of deferred or cancelled maintenance requests in their maintenance management software system. The inspectors should review this list to verify that significant maintenance items are not being indefinitely deferred without proper justification and approval. Confirm that operator workarounds or temporary modifications are not being improperly used to address long-standing maintenance and/or design issues.

10. As appropriate, verify that modifications involving building structures or risk-significant process equipment were properly reviewed for potential impact on the

NPH structural analysis. The licensee should have guidance in their existing engineering or configuration management procedures to screen and perform this review. Examples of items that could impact the analysis include building additions or retrofits, installation of new equipment, changes that impact pipe routing or pipe supports, changes to equipment mounting, braces/brackets, applicable building code(s), or any other changes that have the potential to substantially impact the mass or stiffness of the facility structure or equipment.

11. As appropriate, interview the engineering manager, or other licensee staff, to gain insight into the organizational structure (including how system and design responsibilities are assigned within the organization). Review the license application for any specific requirements with respect to organization, training, and qualification of engineering personnel. If applicable, review training and qualification records, etc., to verify that the engineer has met the license requirements for the position.

02.03 Management Measures.

a. Inspection Requirements

Verify that the licensee established appropriate management measures for IROFS (or other credited safety controls) that were affected by the facility changes selected for the inspection sample. Verify that these management measures ensure that affected IROFS are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed to comply with the performance requirements of 10 CFR 70.61 or applicable conditions of the license. Verify that assumptions in the ISA or safety basis applicable to the modification/system were valid based on the actual configuration and operation of the modified processes.

b. Inspection Guidance

Review the License, License Application, ISA Summary, or ISA basis documents, to determine what management measures the licensee applies to any IROFS that are involved in the modification. In some cases, the licensee has generated a table in the ISA Summary stating which management measures are applicable for the various types of controls including administrative, active engineered, and passive engineered controls. In other cases, the licensee defines the applicable management measures on an IROFS-by-IROFS basis. Verify that the management measures applied to the change process and the management measures applied to the IROFS are sufficient to ensure that IROFS can perform their intended safety function.

Complete the following, as applicable to the modifications or system being reviewed:

- Verify that modifications involving instrumentation & controls (I&C) have established bases for set points and associated uncertainties in accordance with licensee procedures and commitments.

- Verify that like-for-like changes do not negatively impact the fit, form, or function of a component.

- Verify that temporary modifications are properly implemented and do not adversely impact the safety basis.

- Verify that the licensee is identifying engineering design issues and problems and entering them into their corrective action program (CAP).

- Verify that during post-modification testing, the plant was in a safe configuration and that post-modification testing verified the implementation of design and safety system functionality.

- Verify that administrative controls that involve operator action could be accomplished as assumed in the licensee's ISA/safety basis documentation, and that any required training was performed.

Walkdowns

Consider walkdowns and interviews to verify, to the extent possible, that as-built equipment reflects the design description in the modification packages. As appropriate, consider the following:

- Installed equipment/system configuration is consistent with the process and instrumentation diagrams (P&IDs) and safety equipment is appropriately identified on drawings and P&IDs.

- Equipment and instrumentation elevations, including the adequate sloping for piping and instrument tubing, support the design function of the component/system (e.g., backflow prevention).

- Piping is double sleeved where required.

- Floor flatness (e.g., can fissile solution spread out in the event of a leak), no unfavorable geometry equipment that collect fissile solution.

- Motor-operated valve operators and check valves are installed in the orientation required by the manufacturer.

- Location of equipment is not susceptible to flooding, fire, high-energy line breaks, corrosion, or other environmental concerns.

- Physical separation/electrical isolation exists for redundant IROFS or safety controls, as specified in the ISA or other safety analyses, to allow for independent failures.

- Baseplates, hangers, supports and struts are installed properly for seismic hazards. Piping spans meet applicable code requirements and piping is not supported by other piping.

- Equipment installation is consistent with vendor manual recommendations.

- All necessary components of equipment are appropriately labelled so that licensee staff are aware of its safety function.

- Modification did not result in any seismic interaction concerns such that the failure of non-safety equipment that could impact safety equipment.

- Fire protection systems are installed according to design requirements as specified on the licensing basis.

- Components do not contain deficient conditions such as excessive corrosion, missing fasteners, cracks, or degraded insulation.

- Potential interactions with neighboring process systems and utility lines were evaluated.

- If emergency operator actions are credited, they can be accomplished as assumed in the licensee's ISA. For example, can operators evacuate after a chemical release? Considerations may include egress paths, no obstructions of these egress paths, lighting and visibility, evacuation time, and location of emergency shutoff switches.

Verify the management measures applied to the selected facility changes comply with the specific requirements in the license application, the implementing procedures, safety analyses, and ensure that the IROFS can perform their intended safety function. Management measures applicable to the CMS or facility change/modification process include:

1. Configuration Management

   Verify the licensee implemented the applicable aspects of configuration management described in the CMS procedures and the license application. Consider interviews of applicable process and safety engineers and operators to obtain insights on the operational and safety parameters of the modification and to verify that applicable design bases and assumptions were properly considered. Configuration management for IROFS affected by plant changes/modifications may involve the following processes or attributes:

   (a) Establishment of technical design bases/criteria – This includes incorporating the design requirements of applicable codes and standards committed to in the license to the change package (e.g., National Fire Protection Association (NFPA) and American Nuclear Society (ANS)); and should also include consideration/incorporation of requirements from the vendor manual, or other applicable manufacturer's documentation.

   (b) Unintended system interactions – This includes considering the impact on interconnecting systems during design and implementation of the modification.

   (c) Set points – Modifications, especially those involving I&C, have established bases for set points (including associated uncertainties) sufficient to ensure that a safety limit could not be exceeded. Less obvious setpoints may also include things like overflow pipe diameter, air gap size, ventilation flow rate, and the height of piping above a process.

   (d) Alarms and indications – If operator intervention is required, the inspectors should verify if any required alarms and indications were provided in a monitored location. Verify that the specified surveillance and calibrations of any such instrumentation was acceptable.

(e) Design development, review and control process – Design and technical assumptions contained in the technical basis, safety analyses, or other design/safety basis documents are revised and validated as necessary. Additionally, the validity of the existing NPH structural analysis for the buildings or equipment should be confirmed using the guidance in Section 02.02(b)(10).

(f) Like-for-like changes – Verify that the changes do not impact the fit, form, or function of the IROFS. An item can be considered like-for-like if it was procured from the original part manufacturer and has not been subjected to design, materials, manufacturing, or nomenclature changes. NOTE: Licensees do not typically treat like-for-like changes as modifications and may implement them through work orders or other simplified work control processes. This is acceptable when the change is properly classified as like-for-like.

(g) Project approval, initiation, and control process – This includes project readiness review/startup approval, operational turnover, and closeout.

(h) Classification of Modification/Change – Verify that changes were properly classified according to the modification type outlined in CMS procedures (e.g. minor modifications, temporary modification, procedure revision, etc.).

For temporary modifications, verify that the modification was properly evaluated to ensure that the change has not adversely impacted the ISA or safety basis. Licensees are still required to perform 70.72 reviews for temporary changes. Verify that temporary modifications did not place safety systems or IROFS into high-risk configurations that were not properly evaluated. Verify operators are aware of temporary modifications.

2. Procedures

Review risk-significant procedures affected by the modifications to verify that compliance with required procedure control processes and the management measure attributes described in the license application. Specifically, verify that IROFS-related procedures and postings were appropriately updated to include any changes resulting from the modification.

3. Post-Modification Testing

Review post-modification test procedures and test results, and if possible, observe any post-modification test in progress. Consider the following in the review:

(a) The boundary of the IROFS or credited safety control (i.e., the components necessary for the safety function to operate) is adequately considered in the test scope.

(b) The test procedures had appropriate acceptance criteria to demonstrate the intended function(s) of the IROFS or credited safety controls (i.e., acceptance criteria for tested parameters were supported by appropriate calculations or other engineering documents).

(c) Any measuring & test equipment (M&TE) used during performance of the test was properly calibrated.

(d) Unintended system interactions did not occur during testing.

(e) The modification test acceptance criteria were met and IROFS or credited safety controls could perform their required safety functions.

(f) Deviations from acceptance criteria were resolved appropriately.

NOTE: Licensees often use existing procedures, such as surveillance procedures, for post-modification testing. Although performance of existing procedures may have been reviewed by NRC inspectors previously, inspectors may also need to verify the appropriateness of using the existing procedures for validating the modification (as opposed to simply confirming continued operability) because surveillance procedures may not test all necessary aspects of the modification.

4. Maintenance/Surveillance

Verify that the licensee established adequate periodic surveillance testing for modifications affecting IROFS (or other credited engineered safety controls). Review the technical content of the surveillance test procedure to verify it meets the applicable license requirements. Refer to the inspection procedure (IP) 88020, and IP 88025, for additional guidance.

5. Training

Verify, on a sampling basis, that licensee staff involved in the facility changes selected for review are qualified in accordance with the license application and plant procedures.

Verify that controls involving operator action could be accomplished as assumed in the licensee's ISA, or the modification package, after the modification was performed. Verify the licensee identified and conducted the necessary training to implement the modification as described in the license application and plant procedures.

6. Problem Identification and Resolution (Corrective Action Program)

Programmatic review guidance

Request the licensee provides a list of condition reports related to the CMS, configuration management/configuration control management measure, post modification testing, and/or plant modifications. Review a sample of condition reports to verify that the licensee is identifying issues, entering them into the CAP, and correcting the condition as required by license, procedure, and or NRC requirements. (The programmatic guidance is optional for licensees with an approved CAP because it is routinely inspected using IP 88161.)

System-based approach guidance

Obtain a list of CAP entries written regarding the system selected for the inspection in an appropriate time frame. Recommend sorting the list by system and significance and requesting a brief description of the deficiency. (The description should be

adequate to determine if a copy of the full CAP entry should be sampled for review.) Review selected CAP entries since the system/equipment was put in service (or other appropriate time frame) including those resulting from events and degraded/deficient conditions. Review the licensee's technical evaluation to verify that operability was justified and problems were properly identified and corrected. Consider the effectiveness of corrective actions taken by the licensee.

7. Audits

(As applicable) Review recent audits and assessments of the CMS to verify the scope and frequency of the audits are in accordance with the license application and plant procedures. Consider whether safety-significant findings are entered in the CAP for evaluation. Review a sample of condition reports resulting from audits to verify the findings were resolved consistent with the management measures described in the license application.

Verify that audits are performed by qualified individuals consistent with the requirements of the audit program procedure as described in the license application. In some cases, the audit should be led by an external party and may require lead auditor certification.

02.04 License Application Changes

a. Inspection Requirements

Verify the licensee is evaluating changes to the license application, including the need for NRC pre-approval, in accordance with the license requirements.

b. Inspection Guidance

Review the licensee's procedure or document used to determine if NRC pre-approval of the change is required for changes to the license application. Typically, NRC pre-approval of changes is required for changes that result in a reduction in commitments. Refer to license conditions for specific criteria applicable to the facility.

For selected license application changes that did not require NRC pre-approval, verify that the licensee followed their approved change process and reached the correct conclusion. Focus the review on the cumulative effect of changes over time.

Verify the licensee maintains records of evaluations performed for changes to the license application in accordance with applicable procedures. Licensee evaluations should provide the bases for determination that a change to the application did not require prior NRC approval.

NOTE: 10 CFR 70.72 does not apply to changes to the license application unless the license includes a condition to (or the licensee commits to) follow 10 CFR 70.72 to evaluate changes to the application.

02.05 New Processes at Existing Facilities

a. Inspection Requirements

1. For changes that involved new processes, and the licensee determined that NRC approval was not required in accordance with 10 CFR 70.72, verify the licensee provided appropriate technical and regulatory basis for not needing prior NRC approval. Additionally, verify the licensee addressed the requirements of 10 CFR 70.64, including the baseline design criteria and the concept of defense-in-depth, for the design of new processes at existing facilities. For facilities not subject to the requirements of 10 CFR 70.72, verify that any new process has been evaluated for NRC pre-approval in accordance with the conditions of the license.

2. As appropriate, for changes that involved new processes and were submitted to the NRC for review and approval, verify the licensee implemented the change consistent with the license amendment and safety evaluation report.

b. Inspection Guidance

1. Verify that the following design criteria was addressed by the licensee for any modification involving a new process at an existing facility for which NRC pre-approval was not required:

(a) Quality standards and records. Verify the design of the new process was developed and implemented in accordance with management measures such that the performance requirements of 10 CFR 70.61 will be met. As appropriate, verify that appropriate records of these items (post maintenance testing, accident sequence assessment, operator training, etc.) are being retained by the facility until license termination.

(b) Natural phenomena hazards. Verify the design provided adequate protection against the most severe documented historical natural phenomena event for the site.

(c) Fire protection. Verify the design provided adequate protection against fires and explosions.

(d) Environmental and dynamic effects. Verify the design adequately accounted for the environmental conditions and dynamic effects associated with normal operations, maintenance, testing, and postulated accidents that could lead to loss of safety functions.

(e) Chemical protection. Verify the design adequately protects against chemical risks produced from licensed material, facility conditions which affect the safety of licensed material, and hazardous chemicals produced from licensed material.

(f) Emergency capability. Verify the design provided emergency capabilities to maintain control of licensed material and hazardous chemicals produced from licensed material in case of an accident. Verify the evacuation of on-site personnel was considered and on-site emergency facilities and services that facilitate the use of available offsite services would be able to effectively provide support.

(g) Utility services. Verify the design provided continued operation of essential utility services.

(h) Inspection, testing, and maintenance. Verify the design of IROFS provided for adequate inspection, testing, and maintenance, to ensure their availability and reliability to perform their function when needed.

(i) Criticality control. As appropriate, verify the design provided for criticality control including adherence to the double contingency principle and compliance with the performance requirements of 10 CFR 70.61. (This is routinely verified by inspections conducted under IP 88015 and need not normally be performed for this inspection.)

(j) Instrumentation and controls. Verify the design provided for inclusion of instrumentation and control systems to monitor and control the behavior of IROFS.

2. Verify that facility and system design and facility layout is based on defense-in-depth practices. Verify the design incorporated, to the extent practicable, preference for engineered controls over administrative controls to increase overall system reliability as required by 10 CFR 70.64(b)(1). Verify the design incorporated features that enhance safety by reducing challenges to IROFS as required by 10 CFR 70.64(b)(2).

3. Changes that involve new processes at existing facilities and were submitted to the NRC for approval do not require an in-depth inspection of the baseline design criteria. The inspection should be focused on verifying the licensee implemented the change in accordance with the license amendment and the safety evaluation report.

   NOTE: The review of changes involving new processes does not need to be a separate inspection sample. Inspectors can select a new process within their sample and implement all the applicable requirements of this procedure.

02.06 Records Retention

a. Inspection Requirements

As appropriate, verify that the licensee maintains records of changes to its facility in accordance with 10 CFR 70.72(f) (if applicable to the change) and the conditions of the license. Review the licensee's document retention policy to verify records created under 10 CFR 70.72 are lifetime records and include a written evaluation that provides the bases for the determination that the changes do not require prior Commission approval.

b. Inspection Guidance

As appropriate, verify that the licensee has measures in place to retain records of changes to the facility/licensing documents in accordance with 10 CFR 70.72(f) (if applicable to the change) and the conditions of the license. Additionally, 10 CFR 70.51(c)(1) requires, in part, that "Records such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records." Licensees should consider having a document control system for plant changes and the ability to recover records in the event of a computer system failure, accidental damage, or natural disaster. Licensees shall maintain these records until the license is terminated or as stated in the license.

One means to verify the licensee's compliance with this requirement is to select old change records for review as part of the inspection sample (the records must post-date the implementation of Subpart H for this requirement to apply).

88070-03 RESOURCE ESTIMATE

The size of the inspection team formed to implement this IP may vary depending on the size and risk of the facility, the system(s) and number of changes selected for review. Engineering (e.g., mechanical, electrical, structural, etc.), chemical safety, radiation protection, fire protection, and criticality safety personnel should be selected, as appropriate, for the team. The actual hours of on-site inspection are as described in IMC 2600 Appendix B.

88070-04 PROCEDURE COMPLETION

Implementation of this IP is complete when each applicable inspection requirement has been addressed. The individual samples to be inspected, and the breadth of the review will be determined by the inspector based on the degree of compliance with the requirements observed, the risk-significance of the activity, and the extent of the activity or records available. Inspectors may consult with their supervisor and regional and/or NRC headquarters technical staff, if necessary, to prioritize inspection activities.

88070-05 REFERENCES

10 CFR 70, Domestic Licensing of Special Nuclear Material

10 CFR 70.61, Performance Requirements

10 CFR 70.62, Safety Program and Integrated Safety Analysis

10 CFR 70.64, Requirements for New Facilities or New Processes at Existing Facilities

10 CFR 70.72, Facility Changes and Change Process

Regulatory Guide 3.74, "Guidance for Fuel Cycle Facility Change Processes"

IP 88020, "Operational Safety"

IP 88025, "Maintenance and Surveillance of Safety Controls"

IP 88161, "Corrective Action Program (CAP) Implementation at Fuel Cycle Facilities."

END

Attachment 1: Revision History for IP 88070

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	ML061780363 09/05/06 CN 06-020	IP 88070 has been issued because of the need for a new Inspection Procedure for Permanent Plant Modifications.	N/A	ML061780357
N/A	ML13233A187 02/26/14 CN 14-006	The revision does not include any significant technical changes. The scope of the procedure was expanded via de-emphasizing permanent modifications in lieu of safety significant modifications. Plant Safety Committees, a section from the Management Organization IP, was included in the revised IP.	N/A	ML13347B004
N/A	ML16181A153 09/20/16 CN 16-023	Removed the project manager role from the plant modification selection process as a result of FCSE project managers discontinuing the annual ISA Summary and 70.72 review. Also decreased the maximum expected resources from 120 to 80 hours.	N/A	ML16232A186
N/A	ML18102A499 08/21/18 CN 18-027	Revision in its entirety to improve sample selection guidance, clarify inspection requirements and guidance, provide additional guidance on management measures, delete guidance on plant safety committees, and reformat document.	Training for inspectors on the revision by end of September 2018.	ML18100A645
N/A	ML20324A731 12/14/20 CN 20-071	Major revision to incorporate recommendations from the Smarter Fuel Cycle Inspection Program (ML20077L247 and ML20073G659).	N/A	N/A

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	ML25261A038 05/06/26 CN 26-020	Major revision to implement an ADVANCED Act improvement suggestion, by combining guidance/requirements from IP 88072 and changing the inspection from annual to biennial, which reduces the total hours of inspection for plant modifications. To accommodate this, and to allow for better risk informing by the inspectors, many requirements were made optional by stating that they are to be performed as appropriate, and the inspection completion was redefined to be more flexible.	Training for inspectors on the revision before the beginning of CY 2026.	N/A