INSPECTION TECHNICAL PROCEDURE

I-135

READINESS FOR CONSTRUCTION INSPECTION

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Revision 0

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1.0 PURPOSE

This procedure provides guidance for assessing the Contractor's readiness to begin various phases of construction. The Contractor must perform construction activities in a controlled manner in accordance with selected standards. These include the requirements set forth in the Safety Requirements Document (SRD), the Integrated Safety Management Plan (ISMP), the Quality Assurance Manual (QAM), the Radiation Protection Plan (RPP), and limited, partial, or full construction authorization requests (CAR) or agreements.

This inspection assesses the adequacy of the following:

- Contractor's planning for and assessment of readiness for new authorized construction activities
- Procedures for controlling the construction work processes
- Planned program of quality control (QC) oversight
- Training and qualification of personnel
- Implementation of occurrence reporting and emergency response plans.

2.0 OBJECTIVES

The results of this inspection will provide the Office of River Protection (ORP) with confidence that the Contractor and its subcontractors are ready to proceed with additional construction activities. To accomplish this objective, this procedure will be used to assess: (1) the scope of the Contractor's planning and execution of self-assessment activities, and (2) the implementation adequacy of key construction work activities. The Office of Safety Regulation (OSR) expects the Contractor to have accomplished preparations for particular construction activities for work that is scheduled to be performed during the first three months after granting any specific construction authorization. This includes having activity related design completed and approved, and procedures necessary to accomplish the activity in place and verified to ensure procedures and administrative control systems have been implemented as intended.

This procedure will be used several times to support authorizations of new construction activities. These authorizations will take the form of Limited Construction Authorization Agreements (LCAA) and Partial Construction Authorization Agreements (PCAA). The procedure will also be used to support authorization of full construction to assess the readiness of

new areas as they are initiated in the normal process of construction (e.g., civil, concrete, structural, electrical, etc.) The scope of each subsequent inspection will be adjusted in recognition of the results of prior readiness and other programmatic inspections.

3.0 INSPECTION REQUIREMENTS

NOTE: This Section does not contain specific references to the regulatory requirements for each item to be verified. In most instances, the guidance section (Section 4.0) references other technical or administrative inspection procedures that will be used. These referenced procedures cite the specific regulatory requirements.

3.1 Adequacy of the Contractor's Assessment of Readiness

The inspector should verify the Contractor has evaluated and assured its readiness to conduct CAR work.

3.2 Adequacy of the Contractor's Design

The inspector should verify the CAR related design has been completed for important-to-safety and fire water system construction installations planned by the Contractor during the first three months following granting of a specific construction authorization.

3.3 Readiness of the Contractor's Quality Assurance and Quality Control Programs

The inspector should verify the Contractor’s quality assurance (QA) and QC programs necessary to accomplish CAR activities are in place and functioning.

3.4 Readiness of Consumable Material to Support Construction

The inspector should verify the Contractor has defined, procured, received (or have plans to receive), and stored the material necessary to support the first three months of the CAR activities.

3.5 Adequacy of Records Storage Facilities

The inspector should verify the Contractor’s plans, programs, and procedures for establishing record storage facilities, to support the storage and retention of CAR activity records, are in conformance with authorization basis requirements.

3.6 Adequacy of Construction Implementing Procedures

The inspector should verify the Contractor/subcontractors have approved procedures describing administrative controls and work processes for implementing the first three months of important-to-safety and fire water system CAR activities. These procedures should also provide for inspections to ensure construction activities are verified and documented as committed to in the authorization agreement and as required in applicable construction codes and standards.

3.7 Adequacy of Radiological Control Program and Implementation

The inspector should verify the Radiological Control Program (RCP) is developed at a level consistent with the anticipated radiation hazards that may be encountered during authorized construction activities and reflects the requirements of the approved RPP.

3.8 Adequacy of Training and Qualification of Personnel

The inspector should verify the contractor has a program in place to ensure new construction related hires have appropriate qualifications for the positions they are filling, and that the staff will receive training which is commensurate with their job assignments. For construction staff already hired, the inspector should verify their qualifications and training are commensurate with their job assignments.

3.9 Adequacy of the Closure of Inspection or Other Follow-up Items

The inspector should verify completion of any follow-up items, identified during OSR review or inspection activities, and approved by the Verification and Confirmation Official (VCO), in accordance with agreed upon criteria and standards.

3.10 Adequacy of Construction Occurrence Reporting Plan Implementation

The inspector should verify the Contractor has developed appropriate procedures to implement its Construction Occurrence Reporting Plan (Table S7-1, Radiological, Nuclear, and Process Safety Deliverables, Contract No. DE-AC27-01RV14136).

3.11 Adequacy of Construction Emergency Response Implementation

The inspector should verify the Contractor has developed appropriate procedures, designated and trained appropriate emergency responders, and has appropriate equipment and plans for facilities and/or emergency staging areas in accordance with its Construction Emergency Response Plan.

4.0 INSPECTION GUIDANCE

4.1 Adequacy of the Contractor's Assessment of Readiness

This assessment attribute is intended to develop a high level of confidence the Contractor has thoroughly planned the work activities that will be accomplished during the authorized construction phase, and determined the work will proceed smoothly and in accordance with the authorization basis. The scope and depth of this readiness inspection effort will depend upon the depth and breadth of the Contractor's efforts to plan and assess their readiness to conduct the authorized construction work. The sample size should be adjusted depending upon the thoroughness of the Contractor's planning and assessment effort, and the results of prior OSR inspection of construction activities.

The inspector should determine whether the Contractor has performed a thorough assessment of activities to ensure its readiness to begin limited construction work. The inspector should expect that the Contractor has established milestones and completion dates, and identified the tasks necessary for readiness to begin and accomplish the requested construction work activities. The inspector should expect the planned means and execution of construction was approved by management in accordance with established procedures.

In addition, the inspector should ensure, as part of this assessment of readiness, the Contractor has implemented a system to document and track through resolution, all of the discrepant findings identified by the Contractor's assessments. This system should include the prioritizing of discrepant findings to ensure deficiencies that may adversely affect work have been, or will be, resolved prior to beginning work.

The inspector should ensure the Contractor has planned the staffing necessary to accomplish the authorized construction activities. This should include a determination that an adequate number of qualified craft, radiation protection, and QA and QC personnel are, or will be available to support authorized construction activities.

4.2 Adequacy of the Contractor's Design

The inspector should review Inspection Technical Procedure (ITP) I-104, "Design Process Assessment," and use appropriate sections as guidance for this inspection area. In particular, the inspector should verify that, for important-to-safety and fire water system installations to be accomplished during the first three months following ORP authorization of the CAR: (1) the calculations have been completed, reviewed, and approved, (2) the design basis documents have been completed and approved, and (3) the construction drawings have been approved and issued covering approved authorized construction activities.

4.3 Readiness of the Contractor's Quality Assurance and Quality Control Programs

The inspector should review ITP I-133, "Quality Control Program Inspection," and use appropriate sections for guidance during this inspection to verify the Contractor and subcontractors have implemented QC programs to verify quality requirements. In addition, the inspector should review ITP I-132, "Identification and Control of Items and Processes Program Inspection," and use appropriate sections as guidance to address QC program verifications. The inspector should ensure the QA and QC programs of any subcontractors performing authorized construction activities have been, or will be, evaluated and approved by the Contractor and the Contractor has conducted, or has plans to conduct adequate assessments to verify the programs are functioning as specified. Particular attention should be given to those organizations performing the authorized construction activities, focussing on the QA/QC aspects including testing, and receiving, storing, and issuance of construction materials.

4.4 Readiness of Consumable Material to Support Construction

The inspector should verify the Contractor has conducted the following activities in accordance with established procedures: defined the material necessary to conduct at least the first three months of authorized construction work activities; procured the material; received, or has plans to receive the material; and stored, or has plans to store, the material in established storage areas in a manner that will preclude damage or deterioration. The inspector should review ITP I-130, "Procurement Program Inspection," and ITP I-132, and use appropriate sections as guidance for these inspections.

The inspector should verify the Contractor has planned and assured sufficient equipment is, or will be, in place to conduct the authorized construction activities.

4.5 Adequacy of Records Storage Facilities

The inspector should use Sections 3.3/4.3 of ITP I-131, "Document Control and Records Management Program Inspection," as guidance for this inspection. Selected construction and related QA records should be examined to determine if the Contractor procedures relative to record generation and storage are being followed.

4.6 Adequacy of Construction Implementing Procedures

The inspector should use applicable sections of construction ITPs as guidance for inspections of CAR areas as they are authorized. The inspector should also review the Contractor's construction authorization request, and selected Contractor commitments, that apply within 90 days of start of the requested authorized construction, and verify, as applicable, these commitments are documented in construction implementing procedures.

4.7 Adequacy of Radiological Control Program and Implementation

The inspector should use Sections 4.1/5.1 of ITP I-140**,** "Radiological Control Programmatic Assessment," to determine a radiological control program has been developed sufficient for radiological hazards that may be encountered during limited construction. The principal concern is with the possible identification of contamination during earth moving activities and other legacy radioactive waste sources. ITP I-145, "Contamination Monitoring and Control Assessment," should be used to determine the adequacy of implementing procedures and of design and administrative controls to limit the spread of radioactive contamination. The other Technical Inspection Procedures related to radiation control may also need to be used to varying degrees, depending on the extent of the contamination identified.

Industrial Radiography, if used, will likely be conducted by an outside contractor who holds a U.S. Nuclear Regulatory Commission or Agreement State license to perform the activity. In such cases, the Contractor's role is limited to general oversight activities, and the OSR inspection of this area may be minimal.

If this area was inspected previously and found to be acceptable, inspection in this area may not be required.

4.8 Adequacy of Training and Qualification of Personnel

The inspector should review the Contractor's plans and programs for ensuring construction workers will be trained and qualified to perform work commensurate with their positions. The inspector also should review records of at least six designated construction site workers and QC staff hired within the past six months and at least four radiation protection staff to ensure qualifications meet the requirements for the positions for which they have been assigned. Additionally, the inspector should interview at least six individuals who are to be assigned on the job site to determine the effectiveness of their qualifications and training as it pertains to their job assignments. ITP I-106, "Personnel Training and Qualification Assessment," and I-150, "RCP Training and Qualification Assessment," should be reviewed and applicable sections used for guidance.

4.9 Adequacy of the Closure of Inspection or Other Follow-up Items

The inspector should verify that items approved by the VCO as requiring closure before the start of the authorized construction activity, have been completed in accordance with approved standards and acceptance criteria. The inspector should use the guidance provided in Inspection Administrative Procedures A-105, "Inspection Performance," and A-106, "Verification of Corrective Actions," in closing these items. NOTE: Some required follow-up items may be identified by the OSR as a result of the review of the requested construction authorization.

4.10 Adequacy of Construction Occurrence Reporting Plan Implementation

The inspector should review the Contractor's Construction Occurrence Reporting Plan. Interviews should be conducted and any related implementing procedures should be reviewed. A determination should be made as to the likelihood that occurrences will be properly reported based on the systems in place.

If this area was inspected previously and found to be acceptable, inspection in this area may not be required.

4.11 Adequacy of Construction Emergency Response Implementation

The inspector should obtain and review a copy of the Contractor's ORP-approved Construction Emergency Response Plan. Based on this Plan, the inspector should verify the Contractor has appropriate implementing procedures, designated and trained emergency responders, required emergency equipment, and designated emergency staging areas. In addition to using the Plan, the inspector should use I-160, "Industrial Health and Safety Program Inspection," Appendix Q, "Contractor's Emergency Action Plans," for guidance.

If this area was inspected previously and found to be acceptable, inspection in this area may not be required.

5.0 REFERENCES

Integrated Safety Management Plan, BNFL-5193-ISP-01, Rev. 5, Bechtel National, Inc., Richland, Washington, 2001.

Quality Assurance Manual, 24590-WTP-QAM-QA-01-001, Revision A, Bechtel National, Inc., 2001.

Radiation Protection Program for Design and Construction, BNFL-TWP-SER-003, Rev 8, Bechtel National, Inc., Richland, Washington, 2001.

RL/REG-98-25, *Inspection Administrative Procedures*, U.S. Department of Energy, Office of River Protection, 2001.

A-105, "Inspection Performance"
A-106, "Verification of Corrective Actions"

RL/REG-98-26, *Inspection Technical Procedures*, U. S. Department of Energy, Office of River Protection, 2001.

I-104, "Design Process Assessment"
I-106, "Personnel Training and Qualification Assessment"
I-130, "Procurement Program Inspection"
I-131, "Document Control and Records Management Program Inspection"
I-132, "Identification and Control of Items and Processes Program Inspection"

I-133, "Quality Control Program Inspection"
I-140, "Radiological Control Programmatic Assessment"
I-145, "Contamination Monitoring and Control Assessment"
I-150, "RCP Training and Qualification Assessment"
I-160, "Industrial Health and Safety Program Inspection"

Safety Requirements Document, BNFL-5193-SRD-01-02, Volume II, Rev. 4, Bechtel National, Inc., 2001.

6.0 LIST OF TERMS

CAR	Construction Authorization Request
ISMP	Integrated Safety Management Plan
ORP	Office of River Protection
OSR	Office of Safety Regulation
QA	quality assurance
QAM	Quality Assurance Manual
QC	quality control
RCP	Radiological Control Program
RPP	Radiation Protection Plan
SRD	Safety Requirements Document
VCO	Verification and Confirmation Official

Attachments: None