

**INSPECTION TECHNICAL PROCEDURE**

**I-127**

**READINESS FOR LIMITED CONSTRUCTION INSPECTION**

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Revision 1

Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
Verification and Confirmation Official

Concur: \_\_\_\_\_ Date: \_\_\_\_\_

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# INSPECTION TECHNICAL PROCEDURE I-127, REV. 1 READINESS FOR LIMITED CONSTRUCTION INSPECTION

## 1.0 PURPOSE

This procedure provides guidance for assessing the Contractor's readiness to begin potentially important-to-safety and fire water system activities requested by the Contractor's limited construction authorization request. The Contractor committed to perform limited 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 the Limited Construction Authorization Request (LCAR). The limited construction activities (e.g., site preparation, foundation excavation, fire water system installation, and soil compaction, etc.) will be sequenced over time.

This inspection assesses the adequacy of the following:

- Contractor's planning for and assessment of readiness for limited construction
- Procedures for controlling the limited construction work process
- Planned program of quality control (QC) oversight.

## 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 limited construction. 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 limited 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 Limited Construction Authorization (LCA). This includes having activity related design completed and approved, and procedures necessary to accomplish the activity in place and verified to ensure that the procedures and administrative control systems have been implemented as intended.

## 3.0 INSPECTION REQUIREMENTS

**NOTE: This Section does not contain specific references to the regulatory requirements for each item that will 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 their readiness to conduct limited construction work.

### **3.2 Adequacy of the Contractor's Design**

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

### **3.3 Readiness of the Contractor's Quality Assurance (QA) and QC Programs**

The inspector should verify the Contractor's QA and QC programs necessary to accomplish limited construction activities are in place and functioning.

### **3.4 Readiness of Consumable Material to Support Construction**

The inspector should verify the Contractor has defined, procured, and received, or have plans to receive, and stored the material necessary to support the limited construction activities that are planned to begin in the first three months following granting of the LCA.

### **3.5 Adequacy of Records Storage Facilities**

The inspector should verify the Contractor plans, programs, and procedures for establishing record storage facilities, to support the storage and retention of limited construction 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 important-to-safety and fire water system construction activities applicable to the LCA. These procedures should also provide for inspections to ensure that important-to-safety and fire water system aspects of limited construction are verified and documented as committed to in the LCAR and as required in applicable construction codes and standards.

### **3.7 Adequacy of Radiological Control Program (RCP) and Implementation**

The inspector should verify the RCP is developed at a level consistent with the anticipated radiation hazards that may be encountered during limited 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 any start of limited construction-dependent follow-up items, identified during OSR review or inspection activities, and approved by the Verification and Confirmation Official (VCO), have been completed 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 their 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 limited construction phase, and determine 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 limited construction work. The sample size should be adjusted depending upon the thoroughness of the Contractor's planning and assessment effort.

The inspector should determine whether the Contractor has performed a thorough assessment of activities to ensure their readiness to begin limited construction work. To make this determination, the inspector should review the Contractor's adherence to its Construction, Procurement, and Acceptance Testing Plan (Contract Deliverable 4.1 from Table C.5-1.1) and the Construction and Acceptance Testing Program (Contract Deliverable 4.4). 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 limited construction work activities. The inspector should expect the planned means and execution of construction was approved by management in accordance with established procedures. Ideally, these Contractor assessments will have been performed prior to certifying readiness to proceed.

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 that 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 limited construction activities. This should include a determination that an adequate number of qualified craft, radiation protection, and QA and QC personnel are planned or available to support limited construction activities.

#### **4.2 Adequacy of the Contractor's Design**

The inspector should use Sections 5.1.2, 5.1.5, 5.1.6, 5.1.7, 5.1.9, 6.1.2, 6.1.5, 6.1.6, 6.1.7, and 6.1.9 of Inspection Technical Procedure (ITP) I-104, "Design Process Assessment," 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 granting of the LCA: (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 limited construction activities. Examples of the design areas, that may be examined by the inspector, are excavations (plan and grade), backfill, and fire water system installation.

#### **4.3 Readiness of the Contractor's QA and QC Programs**

The inspector should use Sections 4.1, 4.2, 4.3, 5.1, 5.2, and 5.3 of ITP I-133, "Quality Control Program Inspection," as guidance for this inspection area to verify the Contractor and subcontractors have implemented QC programs to verify quality requirements. In addition, the

inspector should use, as guidance, Sections 4.4 and 5.4 of ITP I-132, "Identification and Control of Items and Processes Program Inspection," to accomplish the QC program verifications. The inspector should ensure the QA and QC programs of any subcontractors performing limited construction activities have been, or will be, evaluated and approved by the Contractor and the Contractor has, or has plans to, conducted adequate assessments to verify the programs are functioning as specified. Particular attention should be given to those organizations performing the activities of excavation (plan and grade); backfill; compaction; soil testing; fire protection system installation, concrete batch plant qualifications; and receiving, storing, and issuing material for important-to-safety applications.

#### **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 three months of limited construction work activity; procured the material; received, or have 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 use Sections 4.2, 4.3, 5.2, and 5.3 of ITP I-130, "Procurement Program Inspection," and Sections 4.1, 4.2, 5.1, and 5.2 of ITP I-132, as guidance for these inspections. The inspector should also review the Contractor's adherence to its procurement program (Contract Deliverable 4.1).

The inspector should verify the Contractor has planned and assured sufficient equipment is, or will be, in place to conduct the limited construction activities (i.e., trenching and excavating equipment; backfill compaction equipment; and material to construct fire water systems).

The inspector should verify the testing laboratories for testing soils are planned on functioning in accordance with procedure requirements by using Sections 3.1, 3.2, 4.1, and 4.2 of ITP I-112, "Geotechnical/Foundations Inspection," as guidance for these inspections. ITP I-137, "Inspection of Fire Protection System Construction," may also be used as guidance during this inspection.

#### **4.5 Adequacy of Records Storage Facilities**

The inspector should use Sections 4.3.6 and 5.3.6 of ITP I-131, "Document Control and Records Management Program Inspection," as guidance for this inspection.

#### **4.6 Adequacy of Construction Implementing Procedures**

The inspector should use Sections 3.1 and 4.1 of ITP I-112 as guidance for the soil aspects of this inspection effort. The inspector should also review the Contractor's Limited Construction Request, and selected Contractor commitments, that apply within 90 days of start of limited construction, and verify, as applicable, these commitments are documented in construction implementing procedures.

#### **4.7 Adequacy of RCP and Implementation**

The inspector should use Sections 4.1 and 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. Sections 3.1, 3.2, 3.3, 4.1, 4.2, and 4.3 of 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.

#### **4.8 Adequacy of Training and Qualification of Personnel**

The inspector should review the Contractor's plans and program 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 that the 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," Sections 3.3 and 4.3, and applicable sections of I-150, "RCP Training and Qualification Assessment," should be 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 Limited Construction, 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 LCAR.

#### **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.



#### **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.

### **5.0 REFERENCES**

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

*Quality Assurance Program*, BNFL-5193-QAP-01, Rev. 8, Bechtel National, Inc., Richland, Washington, 2001.

*Radiation Protection Program for Design and Construction*, BNFL-TWP-SER-003, Rev 7, Bechtel National, Inc., Richland, Washington, 2001.

RL/REG-98-25, *Inspection Administrative Procedures (IAP)*, 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-112, "Geotechnical Foundations Inspection"

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-137, "Inspection of Fire Protection System Construction,"

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, Volumes I and II, Rev. 2 and Rev. 3 respectively, Bechtel National, Inc., Richland, Washington, 2001.

## 6.0 LIST OF TERMS

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