

**ENVIRONMENT, SAFETY, HEALTH AND QUALITY
DIRECTORATE**

BROOKHAVEN NATIONAL LABORATORY

Procedure No. DH-SOP-004

Revision No. 0

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WORK PLANNING AND CONTROL SYSTEM PROCEDURE

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1.0 PURPOSE/SCOPE

The purpose of this procedure is to implement ESH Standard 1.3.6, “Work Planning & Control for Operations”, within the ESH&Q Directorate. This procedure provides the system to apply the proper levels of planning and control for work that is not covered by internal control documents, standard operating procedures, or by experimental design plans (ESH Standard 1.3.5).

This procedure does apply to the following organizations as outlined within the document.

- Environmental Services Division (ES)
- Radiological Control Division (RP)
- Safety and Health Services Division (HP)
- Occupational Medicine Clinic (OM)

This work planning and control implementing procedure does not apply to the following organizations within the ESH&Q Directorate since their work is entirely administrative. However, on occasions when they visit areas with local hazards, the site or local hazard procedures outlined in this guideline will prevail.

- Independent Oversight Office (OS)
- Performance-Based Management & Integrated Assessment Office (DH)
- Quality Program Office (QA)
- Standards Based Management System Office (DH)
- Training and Qualification Program Office (TQ)
- Safety Management Systems Integration Office (DH)

2.0 RESPONSIBILITIES

2.1 Work Control Manager

- 2.1.1 Ensures that Work Control Coordinators within the Directorate are trained to apply the requirements of this Work Planning and Control Procedure such as the work screening guidelines, the work permit, worker feedback, and other key requirements identified below.
- 2.1.2 Establishes periodic monitoring of the work control system performance.

2.2 Work Control Coordinators (WCC) are responsible for:

- 2.2.1 Screening work requests.
- 2.2.2 Determining when work permits are required.
- 2.2.3 Advising the requester on how to process the work permit.
- 2.2.4 Ensuring compliance with Departmental/Divisional work control procedures.
- 2.2.5 Monitoring quality of completed work permits and maintaining records.
- 2.2.6 Notifying the Building Manager of any activities that may impact the hazard classification or safety envelope of the facility and require changes to the Facility Use Agreement.

See the [Work Control Managers/Work Control Coordinator](http://epweb.pe.bnl.gov/WEB_WCM.htm) web site for the current list of ESH&Q Coordinators and their area of responsibility.

http://epweb.pe.bnl.gov/WEB_WCM.htm.

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2.3 Primary Reviewer

Work Control Coordinators also serve as Primary Reviewers of the work permits with input from the appropriate subject matter experts as needed. The Primary Reviewer shall ensure that the work permit properly identifies the hazards and work controls, and that the level of planning is adequate for the level of risk, complexity, and work coordination.

2.4 Building Manager

Building managers shall ensure that activities planned for the building infrastructure and common systems do not compromise the building Safety Envelope as defined in the FUA (Facility Use Agreement) and do not impact the OSL (Operational Safety Limits) of ongoing experiments.

3.0 DEFINITIONS

Work includes physical activities involving maintenance, modification, setup, or construction of facilities, systems, or equipment by BNL or non-BNL personnel. The definition of work for this standard (ES&H 1.3.6) does not include the work involved in planning, analyzing, and conducting experiments.

Low Hazard Work is work requiring the attention of the appropriately trained performer to prevent minor injury. Failure to correctly perform low hazard work should not damage equipment or structures, release potentially hazardous materials to the environment, or injure personnel except as a result of gross negligence. Work examples are given in Tables 1 and 2 of ESH Std. 1.3.6. <https://sbms.bnl.gov/ld/ld08/ld08d111.htm>.

Moderate Hazard Work is work requiring the coordinated actions of one or more person(s) to prevent any injury to personnel, minor damage to equipment or structures, or a release of hazardous materials to the environment. Work examples are given in Tables 1 and 2 of ESH Std. 1.3.6. <https://sbms.bnl.gov/ld/ld08/ld08d111.htm>.

High Hazard Work is work requiring the coordinated actions and administrative and/or engineering controls of one or more person(s) to prevent serious injury to personnel, significant damage to equipment or structures, or releases of reportable quantities of potentially hazardous materials to the environment. Work examples are given in Tables 1 and 2 of ESH Std. 1.3.6. <https://sbms.bnl.gov/ld/ld08/ld08d111.htm>.

Skill of the Craft is the level of proficiency required by the worker to successfully perform the work using existing knowledge, experience, or procedures without direct supervision. It is applied to routine, low hazard tasks. The tasks can range from complex to simple day-to-day activities. The level of a worker's technical proficiency shall be verifiable with documented qualification from the work provider.

Work Request is an authorizing document or form that contains the requirements for work to be performed including citing applicable procedures, permits, schedules, and other written documentation as driven by the complexity and hazards of the job.

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Work Permit is a work request form that is exclusively used to control the flow of external work coming into a facility. The permit provides a higher level of control over external personnel on jobs where the hazards and the degree of coordination require tighter constraints.

4.0 PREQUISITES

A prerequisite for applying the work control system is to understand the concepts of “skill of the craft” and “graded approach”. These concepts are presented in Section IV of ESH Standard 1.3.6 <https://sbms.bnl.gov/ld/ld08/ld08d111.htm>.

5.0 PRECAUTIONS

None

6.0 PROCEDURE

6.1 Controlling External Work

As stated in section 1.0, this work control procedure applies to ES, RP, OM and HP . The divisions have Work Control Coordinators to screen work requests and determine when work permits are needed. The Coordinators screen each request for external services (hands-on type of work) within their organization and record the information in a logbook as described in this section.

6.1.1 Work Request Screening

The Work Control Coordinator uses the Hazard Screening Guidelines shown in Tables 1 and 2 of ESH Std. 1.3.6 for the criteria in making the judgment call on low, moderate, and high hazards.

6.1.1.1 Low Hazard Work

If the Work Control Coordinator or his/her designee decides that the work falls into the low hazard category, no work permit is required, and the request is called into MMC (extension 2468), Central Shops, or other service organizations. Routine maintenance work requests are not reviewed by the coordinators; see Section 6.1.1.4.,below.

6.1.1.2 Moderate and High Hazard Work

For work requests falling into the moderate or high hazard category, the Work Control Coordinator will require a work permit to conduct the necessary level of hazard analysis, planning, and work coordination. If unsure on categorizing the work, contact the Work Control Manager. The Work Control Coordinator notifies the work requester to fill out the work permit. See SBMS/ ESH Std. 1.3.6

Attachments for the "work permit" form and instructions on how to fill it out. <https://sbms.bnl.gov/ld/ld08/ld08d111.htm>.

6.1.1.3 Record Keeping by the Work Control Coordinator

The Work Control Coordinator maintains a logbook of all service work for their assigned facility except for the routine work stated in 5.1.4. The logbook contains the following information:

Description of work request

Requisitioner's name

Service Division tracking number (i.e., Dept/Div code-01,02 etc.-year)

Date of request

Work permit required--yes or no

6.1.1.4 External Service Work Not Screened

Since ES, RP, HP, and OM are housed in administrative buildings, the routine building maintenance work listed below is not screened nor logged by the WCC's.

- Relamping
- Work on the HVAC systems
- Plumbing work in the rest rooms
- General building maintenance

6.1.1.5 Contracted External Services: When any non-BNL external service is purchased, the requisition system requires that the WCC review the scope of work if the contractor or vendor will be doing "hands-on" work. The WCC uses Table 1 in ESH Standard 1.3.6 as a criteria to screen the proposed work and to determine if ISM language needs to be in the contract and if a work permit is needed.

6.1.2 Work Initiation: The requester of the work contacts the Work Control Coordinator to determine if a permit is required. If a work permit is required, the Work Control Coordinator gives the requester a work permit form.

6.1.2.1 The requester fills out block #1 of the work permit giving as much detail as possible or attaching a scope of work document. The requester also fills out block #2 (Hazards and Controls) indicating the location hazards and other ES&H concerns. (Please note that it is the responsibility of the service division to recognize and fill in the task related safety concerns.)

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6.1.2.2 The requester makes two copies of the work permit, one for his/her retention and one for the division. The original goes to the service provider.

6.1.3 Work Planning

6.1.3.1 The requester calls the service providers and schedules a planning meeting or walk down of the job site. In some cases, the service provider supervisor may call the requester first to request the meeting. Wherever appropriate the requester should include the RP Facility Support Representative in this meeting. The requester is responsible to call the proper disciplines for the planning and review meeting depending upon the hazards involved (i.e., for work in a radiation area, a Radiation Control Technician or supervisor should attend the meeting). The service organization should bring a tradesperson or technician to the meeting, if applicable, to aid in planning the job and identifying potential hazards. Lessons learned should be referenced if applicable. <https://sbms.bnl.gov/standard/Ot/Ot00t011.htm>.

6.1.3.2 At the planning meeting or walk down, the team completes the plans in block #3 and finishes off any additional hazard identification and controls in block #2. The requester or the team determines if a post job review is required, and checks off either "YES" or "NO" at block #6.

6.1.4 Work Permit Review by Primary Reviewer

The work requester sends the work permit (original copy) with at least blocks #1, #2, and #3 filled out to the Work Control Coordinator who also serves as the Primary Reviewer for final review and sign off at the bottom of block #3. Wherever appropriate, if the RP Facility Support Representative was not present at the planning or walk down, then he or she must review and sign along with the Primary Reviewer. Comments or restrictions may be added by the reviewers to blocks #2 and #3 due to coordination or safety concerns.

6.1.5 Flow of the Work Permit Following the Review

After the Primary Reviewer has conducted his/her review of the work permit, the paperwork flow goes as described in Section VI of ESH Standard 1.3.6. <https://sbms.bnl.gov/ld/ld08/ld08d111.htm>.

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6.2 Controlling Internal Work

“Internal Work” means work performed by personnel within the group for the organization. This procedure applies to ES, OM, and RP due to the hands-on work done by the technicians and staff members. The procedure also applies to HP personnel, but on a small range of work activities.

6.2.1 Environmental Service Division

ES provides technical assistance on environmental requirements through subject matter experts and technical services. The work control process applies to the technicians within the Environmental Sampling Services Group. Occasionally, certain environmental sampling work requests will require a work permit due to the unusual nature or circumstances of the job. The majority of the sampling requests are controlled by an ES form “Sample Request Form/Supplemental Health & Safety Plan” which follows the 5 Core Functions of ISM. The other duties of the technicians are controlled by Standard Operating Procedures (SOPs). Each technician is trained on the SOPs and must demonstrate their skills to meet specified qualifications.

6.2.2 Radiological Control Division

The work performed by the Radiological Control Technicians (RCTs) is well controlled by their SOPs and the requirements of the Radiological Work Permit (RWP). The training and qualification of the RCTs is sufficiently documented by their training program. Due to the extensive use of the SOPs and RWPs, work permits will be used on an infrequent basis as driven by site conditions where radiological support is provided. Typically the RCT will be providing support to a project or work request, where the project owner generates a permit.

6.2.3 Safety and Health Services Division

The majority of the job activities performed by HP personnel are not hands-on work and are not covered by the 1.3.6 Standard. The field surveying and monitoring work conducted by HP personnel, however, is screened for application of the standard and possible use of work permits as driven by site conditions and complexity of the operation.

6.2.4 Occupational Medicine Clinic

The majority of work performed by the Clinical Staff is controlled by an annual credentialing procedure and by approved medical protocols. Any work requests outside of medical services are reviewed and coordinated through the OM Work Control Coordinator.

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6.2.5 Process for Internal Work

The process for reviewing internal work activities not covered by SOP's or qualified training is the same as the steps outlined in Section 6.1.

6.3 Change Control

If changes to an active work request are made which present new hazards, the Work Permit and the new hazards must be discussed with the Work Control Coordinator as appropriate to the Work Permit requirements. Note if minor changes and new minor hazards on the existing Work Permit Form; initial and date the changes and notify the workers. If there are major changes/hazards, another review must be done by the primary reviewer.

6.4 Worker Feedback and Improvement

Moderate and high hazard work work permits will have a post job debriefing as needed to obtain worker feedback and to provide an opportunity for improvement. A list of suggestions for improvement should be documented for incorporation into on-going future jobs where applicable.

7.0 IMPLEMENTATION AND TRAINING

It is the responsibility of the Work Control Manager to ensure that the 1.3.6 Work Control Program is implemented properly within the ESH&Q Directorate. The Work Control Manager should meet with Work Control Coordinators periodically to discuss how the program is functioning and make adjustments as needed. All new Work Control Coordinators must attend the Work Control Coordinator Training Class, #GE-Work Control 1.

8.0 ATTACHMENTS

None

9.0 REFERENCES

BNL ES&H Standard Manual, "Work Planning and Control System", 1.3.6, Rev. 3
 BNL ES&H Standard Manual, "Experiment Safety Review", 1.3.5
 DOE Policy 450.4, Integrated Safety Management System
 BNL Procedure for Stopping Work-Imminent Danger, SBMS Subject Area
 BNL Radiological Stop Work Procedure, SBMS SubjectArea