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Procedure Contains NMM REFLIB Forms: YES  NO

<b>Effective Date</b> 02/11/08	<b>Procedure Owner:</b> <b>Title:</b> <b>Site:</b>	Dennis Legere Director, Outage and Work Management Echelon	<b>Governance Owner:</b> <b>Title:</b> <b>Site:</b>	Joseph P. DeRoy VP, Ops Support Echelon
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Exception Date*	Site	Site Procedure Champion	Title
	ANO	James Hoffpauir	Manager, PS&O
N/A	BRP	N/A	N/A
	GGNS	Mathew Rohrer	Manager, PS&O
	IPEC	Paul Studley	Manager, PS&O
	JAF	Dave Wallace	Manager, PS&O
	PLP	Marty Richey	Manager, PS&O
	PNPS	Arnold Owens	Manager, PS&O
	RBS	Brent Matherne	Manager, PS&O
	VY	Chris Wamser	Manager, PS&O
	W3	Robert Peters	Manager, PS&O
	NP	N/A	N/A
	HQN	N/A	N/A

**Site and NMM Procedures Canceled or Superseded By This Revision**

EN-WM-105, Rev 2

**Process Applicability Exclusion:** All Sites:

Specific Sites: ANO  BRP  GGNS  IPEC  JAF  PLP  PNPS  RBS  VY  W3  NP

**Change Statement**

No change to procedure. This revision acknowledges that Palisades has adopted this procedure. Palisades will continue to use site specific interface procedures until the corresponding Entergy interface procedure is adopted for use at Palisades.

\*Requires justification for the exception

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## 1.0 PURPOSE

- [1] This Procedure provides instructions to ensure that work is planned in a manner consistent with its importance to plant safety and potential to impact unit availability. This procedure applies to all work planned in the work management system.
- [2] If Indus Asset Suite is not available, refer to EN-WM-100 to obtain a work order form. All provisions of this procedure should be considered if planning a work order manually.
- [3] Model Work Orders for preventative maintenance are prepared by planning in accordance with this procedure. Changes as part of the living PM program are addressed as a separate process.
- [4] Canceling work orders is addressed in EN-WM-100.

## 2.0 REFERENCES

- [1] ENN-DC-112, Engineering Request and Project Initiation Process
- [2] ENS-DC-112, Engineering Request and Project Initiation Process
- [3] ENS-DC-114, Project Management
- [4] EN-DC-117, Post Modification Testing and Special Instructions
- [5] EN-DC-127, Control of Hot Work and Ignition Sources
- [6] EN-DC-136, Temporary Modifications
- [7] ENN-DC-161, Transient Combustible Program
- [8] EN-DC-313, Procurement Engineering Process
- [9] EN-DC-337, Living Preventative Maintenance Program
- [10] ENN-EV-112, Chemical Control Program
- [11] EN-LI-100, Process Applicability Determination
- [12] EN-LI-102, Corrective Action Process
- [13] EN-MA-101, Conduct of Maintenance
- [14] EN-MA-102, Maintenance Inspection Program

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2.0 (cont.)

- [15] EN-WM-107, Post Maintenance Testing
- [16] EN-MA-123, Identify and Trend Rework
- [17] EN-OE-100, Operating Experience Program
- [18] EN-WM-100, Work Request (WR) Generation, Screening and Classification
- [19] EN-WM-101, On-Line Work Management Process
- [20] EN-WM-102, Work Implementation and Closeout
- [21] EN-WM-109, Scheduling
- [22] Quality Assurance Program Manual
- [23] EPRI Final Report 1011903, Maintenance Work Package Planning Guidance
- [24] EPRI Final Report 1009709, Post Maintenance Testing: A Reference Guide, Revision 1
- [25] INPO AP 928, Work Management Process Description
- [26] NUREG 0612, Control of Heavy Loads
- [27] Indus User Guide IM-06, Creating Material Request and New Item Initiation Through Work Management
- [28] Indus User Guide WM 2.0, Creating Work Orders
- [29] Indus User Guide WM 3.0, Plan Work Order
- [30] Indus User Guide WM 3.2.5, Permits

### **3.0 DEFINITIONS**

- [1] Critical Step – An irrevocable act whereby improper implementation could result in a plant transient or trip, could result in damage to or improper/unintended function of significant plant equipment, or could result in an injury to self or others.
- [2] Duration – the time used for scheduling purposes. That period after the pre-job brief from when the craft sets the task to WORKING plus the in the field time (wrench time) until the task is set to FINISHED.

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3.0 (cont.)

- [3] Editorial Change – Those instances where the work instructions or references address the scope of the work adequately but some additional details or wording could clarify the steps. Editorial changes can be made by pen and ink change by the craft supervisor or by contacting planning to have the item changed. .
- [4] Embedded Document – A set of instructions or information that is specific to a task and for which the specific information contained therein is what is meant to print with the work order task. Embedded documents are current only on the day they are associated with the task. Use this form of association for documents not subject to revision control.
- [5] Job Type – The code that identifies at the task level the type of work to be performed. Refer to Attachment 9.10 for job types.
- [6] Linked Document – Usually a form or attachment that the planner wants the latest revision of the document or form to print when the task is printed.
- [7] Planning Peer Review – The process of another knowledgeable or technically qualified individual verifying the workability, accuracy or completeness of a work package.
- [8] Plant Impact – an evaluation of the impact of the work on the plants' operating condition and compensatory actions. The plant impact consists of the Component Impact and the Operational Impact. This is performed via an Assessment in IAS.
- [9] Post Maintenance Testing (PMT) – testing performed following maintenance or design change activities to demonstrate and document the capability of a system, device or component. Post maintenance testing further verifies that the original deficiency has been corrected without the introduction of any new deficiencies.
- [10] Scope Change – An instance where the intent of the work to be performed has changed or was not identified correctly.
- [11] Special Tools – Those tools or equipment required for work that have a limited or specific function, application, or scope and are not normally part of a craft person's tool-kit or station tool room. Not all M&TE is included in this definition.

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3.0 (cont.)

- [12] Skill of the Craft – Standard industry work skills that are common knowledge to individuals performing the work. This includes standard nuclear plant work practices, such as control of consumable materials, tool control, radiological work practices, etc., and also includes skills taught by a formal training program or an accredited on the job training (OJT) program. The craftsperson performing this work is either qualified to perform the work or is under the supervision of a qualified individual. See attachment 9.15 for items considered skill of the craft.
- [13] Task – The functional unit of a work order in Indus Asset Suite used to plan, schedule, review, implement and control work.
- [14] Work - any activity or task by any group that is being controlled by the Work Management System.
- [15] Work Instructions – Text provided for performance of the work to be accomplished. The level of detail is dependent on the risk significance of the work as determined in the graded approach to planning. Approved documents may be referenced and will suffice as work instructions.
- [16] Work Order – The functional unit in IAS used to bundle a set of related tasks.
- [17] Work Order Type – A code value in the work management system that designates the source document from which the work order was prepared. WO types are:
- (a) MD – A work order assembled to implement an engineering change.
  - (b) MM – A work order used to implement the minor maintenance process.
  - (c) MO – A standard or pre-plan created as a template.
  - (d) PM – A work order generated through the PMRQ system.
  - (e) RP – A work order generated from the inventory system to track the repair or rebuild of an item.
  - (f) UP – A work order generated on an expedited basis for emergent work.
  - (g) WO – Any work order not defined above.
- [18] Work Package - A compilation of documents including the work order task, work instructions, and any other supporting material (e.g., drawings, vendor manuals, weld process sheets, operation experience, safety analysis, permits, etc.).

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3.0 (cont.)

[19] Work Package Type - There are three types of Work Packages that define the level of detail and documentation requirements for work instructions in a work order task as follows:

- Minor Maintenance Package: Work to be performed within the skill of the craft. No written instruction is provided. Reference procedures may be used.
- Reference Package: The level of detail is above skill of the craft but reference material is available to provide all of the necessary guidance. This includes procedures, work standards, vendor manuals and/or excerpts of these references.
- Compliance Package: Work performed using detailed work instructions and/or documents.

#### **4.0 RESPONSIBILITIES**

[1] The Director PS&O is responsible for maintenance of this procedure.

[2] Planning Superintendent/Supervisor is responsible for:

(a) The implementation of this procedure.

[3] The Planner is responsible for ensuring development of work packages in accordance with this procedure.

(a) Initiation of permits in IAS.

(b) problem validation and comprehensive work package support details.

[4] The Work Implementing group is responsible for:

(a) Performing field walk-downs with the planner when requested.

(b) Concurring with the determination of work package type

(c) Identifying the need for vendors, initiating and processing the requisition for, and coordinating and controlling any vendor(s) needed to support the work.

(d) Providing feedback.

(e) Identifying desired contingency plans and materials appropriate for the risk significance of the task.

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4.0 (cont.)

- [5] Operations is responsible for performing an Operations Assessment which at a minimum includes:
- (a) Reviewing the Component Impact portion of the Plant Impact Assessment.
  - (b) Completing the Operational Impact portion of the Plant Impact Assessment.
  - (c) Ensuring review comments are incorporated into the work instructions prior to approval of the Operational Impact.
    - (1) This can be done formally by returning the package to planning using the Indus Asset Suite "Returned" status, or,
    - (2) Direct communication with the individual planner when time permits is encouraged to provide coaching opportunities and to allow timely completion of work.
  - (d) Verifying the [Control Room Communications] flag requirements for start of work.
  - (e) Setting the [Hold for Ops Review] flag. If checked, this flag will place a "Hold for Ops Review" status on any Task set to Finished by the craft. Operations will be required to review the task and clear the hold for the task to advance to complete. Set the [Hold for Ops Review] flag on the last scheduled task in the sequence in accordance with the following protocol:
    - (1) If there is an Operations Return to Service task, set the flag on that task, otherwise,
    - (2) If there is a Maintenance PMT task, set the flag on that task, otherwise,
    - (3) If the main task encompasses the PMT, set the flag on that task.
  - (f) Verifying the [PMT] flag is set and that tasks for functional and operational testing exist and are correct as needed.
  - (g) Verifying under the [Requirements] tab that TAGOUT and LCO requirements exist(s). Add/delete TAGOUT and LCO as needed.
  - (h) Identifying actual or potential contingency measures required and compensatory actions.

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4.0 (cont.)

- [6] Radiation Protection is responsible for:
- (a) Generating and reviewing a report that identifies tasks with incomplete RWP requirements on the [Requirements] tab.
  - (b) Conducting reviews of those tasks.
  - (c) Releasing the RWP hold by entering the RWP number and dose estimate for that requirement.
- [7] Engineering is responsible for:
- (a) Conducting reviews (approvals) for tasks routed by planning to the engineering organization.
  - (b) Providing input for functional and special testing PMT tasks.

## **5.0 DETAILS**

### 5.1 PRECAUTIONS AND LIMITATIONS

None

### 5.2 DEVELOP TASK(S)

#### [1] PERFORM TASK REVIEW

- (a) Review the work order request and contact the originator or craft supervisor for clarifications.
- (b) Field Walk-down
  - (1) Communication should be conducted between the Planner and the responsible Supervisor or designee for Compliance Packages.
  - (2) The Planner and Supervisor should consider a field walk-down of the task. If access to an area is not possible or a walk down is not value added, the use of existing photographs and detailed drawings should be considered. ALARA considerations may preclude a field walk-down.
  - (3) If practical, observe equipment in operation to validate the problem description.

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5.2 [1](b) (cont.)

- (4) Evaluate the immediate area to identify problems which may have contributed to the deficiency such as:
    - Abnormal temperatures in the area or on other equipment in the area
    - Excessive corrosion
    - Deterioration of insulation, ducts, seals
  - (5) If the field configuration does not match that contained in the controlled documentation, initiate a Condition Report for resolution of noted discrepancies
  - (6) If equipment data (e.g. serial number or model) does not match that contained in the equipment database, then perform or request a database update.
- (c) Consult Planning References
- (1) Utilize available sources to get an understanding of the equipment, its function and operational characteristics (this list is not all inclusive):
    - Vendor manuals
    - Drawings
    - Procedures
    - Planning files
    - Information from system experts
    - Equipment history
    - Operating Experience
    - Vendor information obtained via the internet

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5.2 [1](c) (cont.)

- (2) Obtain set points, torque values, lubrication requirements and similar data from controlled sources. This information may be found in the equipment database (EDB) section of IAS. If the print flag is set to "Y" in the parameters section of the EDB the information will print on all work order tasks associated with that equipment.
  - (3) Review the approved design documentation and approved vendor information.
  - (4) If during component history review it is identified that a deficiency meets the requirements of Rework in accordance with EN-MA-123, initiate a Condition Report identifying the Rework. Document the CR number in the description field. The resolution of the Condition Report may provide feedback for the planning process but should not delay the timely completion of the planning process.
- (d) Review Industrial Safety Hazards
- (1) Special consideration should be given to industrial safety. Consider the following:
    - If work is on or around a structure, system or component (SSC) that is a stored energy source (e.g., batteries, springs, pressurized fluid, elevated temperature).
    - Need for special permits.
    - Presence of Asbestos or Lead containing materials.
    - Adequate lighting.
    - Potential for ammonia or hydrogen.
    - Fall protection.
    - Use of chemicals.
- (e) Review Physical Considerations
- (1) Determine interferences requiring removal before performing the work.

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5.2 [1](e) (cont.)

- (2) If necessary, submit an Engineering Change Request for removal of seismically qualified piping system components.
  - (3) Determine risk-to-generation plant equipment that may be affected by implementation of the work instruction or that is within close proximity (usually 6 feet) of the affected work area.
  - (4) Foreign Materials Exclusion (FME) considerations or requirements.
  - (5) Cleanliness Control requirements.
  - (6) Scaffolding, insulation, paint removal and/or application, etc.
  - (7) Identify any barriers (e.g., doors, floor plugs, penetrations) that may need to be controlled to support the work.
  - (8) Access limitations
  - (9) Determine if any fire protection equipment in the area, which may be affected by the maintenance (e.g., sprinkler system blocked).
  - (10) Identify the need for rigging to implement the work plan and submit an engineering change request as needed.
  - (11) Determine if heavy lifts as defined by procedures is applicable.
- (f) Review Radiological Considerations
- (1) Consider work plans that take advantage of reduced dose (ALARA) methodologies (prefabrications, bench calibrations etc.)
  - (2) If necessary, discuss alternatives with RP and implementing department.
- (g) Determine Security Considerations
- (1) Identify the need for Security support when:
    - a. Creating an opening 96 square inches or greater in the Protected Area barrier, Access Controlled Area barrier, or Vital Area barrier.
    - b. Working within the Isolation Zone (20 ft. either side of the Protected Area barrier), including the opening of grates and man-ways.

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5.2 [1](g) (cont.)

- c. Impacting security equipment either directly or indirectly by construction of temporary structures that limit fields of view or access.

[2] DETERMINE LEVEL OF DETAIL

- (a) The level of detail determines the work package type and work instruction requirements. It is based upon the industrial and nuclear safety significance and complexity of the work. This graded approach to work package planning promotes planning efficiency commensurate with the risk to perform the work.
- (b) Consult Attachment 9.7 for guidance in determining Work Package Type.
- (c) Work Package Type determination may be performed at the initial screening or during the planning or FIN process.
- (d) Denote Work Package Type in the work order task [Work Package Type].
- (e) WOs should be periodically reviewed to ensure detail is up to current standards. See attachment 9.16 for details.
- (f) See attachment 9.17 for detail requirements for lifted leads and jumpers.

[3] COMPLETE ACCOUNTING CODES

- (a) Ensure the accounting codes are completed in accordance with business rules.
- (b) Completion of the accounting string is required before details can be added or changes can be made to the task.
- (c) Accounting string blocks populate from the equipment database.
- (d) Ensure the correct project and outage codes are added at work order creation.

[4] DEVELOP WORK INSTRUCTIONS

- (a) Use the global planning macro to ensure standard text development for those packages requiring step text. See attachment 9.1 for standard work order instructions formatting. The global planning macro is not used for minor maintenance and reference packages where approved documents are used as work instructions.

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5.2 [4] (cont.)

- (b) Task 01 should always be the lead discipline task and should have an Assessment generated for the task to prompt operations review of the entire work order and tasks. Other tasks may also have assessments associated with them.
- (c) Apply the SAFE concept during work step development. Ask yourself the following specific questions and insert appropriate steps, sign-offs, concurrent or independent verification to help eliminate human performance errors, increase quality and reduce the potential for rework.
  - (1) What are the critical steps or phases of the Work Order Task? (Summarize the important points)
  - (2) How can I make a mistake at this point? (Anticipate error likely situations)
  - (3) What is the worst that can happen? (Foresee potential consequences and contingencies)
  - (4) What barriers or defenses are needed? (Evaluate defenses)
- (d) For Minor Maintenance packages:
  - (1) Minor Maintenance packages identify the problem and what needs to be done leaving “how to” resolve the issue to the skill of the craft.
  - (2) Attachment 9.15 lists typical skill-of-the-craft items. The expectation is that for tasks or specific work instruction steps the planner will denote the action(s) in this chart without any further clarification.
- (e) For Reference packages the planner will identify “what” needs to be done.
  - (1) Refer to approved references for work instructions.
  - (2) The global planning macro is not used for reference packages. Instructions are typed directly into the task instructions.
- (f) Compliance packages require step instructions using place-keeping and verifications. The Global Planning Macro shall be used to develop the work instructions. Note that the primary difference between compliance and reference packages is the level of detail of work instructions. For Reference packages, the level of detail is much less because either a higher reliance is placed on the skill of the craft or because those work

Comment: This sentence added by Mike Williams but color wouldn't change so retyped it.

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instruction details are already described in an existing instruction or procedure that is simply cross-referenced in the work order task.

- (g) On the Task Detail panel/tab:
  - (1) Place a concise statement of the work to be performed in the [Description] block. This title becomes the schedule activity in the scheduling software. Some examples are:
    - a. "Remove, rebuild and replace pump"
    - b. "Pull breaker, inspect and re-install"
    - c. "Perform breaker swap"
  - (2) Summarize in [Task Instructions] the task overview (e.g. "Calibrate transmitter in accordance with attached work instructions). This information prints on the work order task.
- (h) Any document subject to revision control should be linked to the work order to ensure the current revision is printed with the package. This will allow the latest revision of a form or document to print when the task is printed.
- (i) Any document that has data specific to the task should be embedded to ensure the instructions or text is not modified inadvertently. This will ensure that the task specific information prints when the task is printed.
- (j) On the Work Instructions panel/tab:
  - (1) Add the global planning macro work instructions for Compliance packages.
  - (2) Add the applicable task specific work standards.

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5.2 [4] (cont.)

- (k) Attach references applicable to the task on the Controlled Documents panel/tab (this list is not all inclusive):
  - (1) Procedures
  - (2) Blank Forms
  - (3) Pictures
  - (4) Maps
  - (5) Manuals
  - (6) Document Standards
- (l) Where work steps change plant system line-up within system isolation boundaries, the work instruction must also contain restoration steps.
  - (1) The restoration step will include sign-off as documentation and verification of restoration.
- (m) Special instructions for altering station line-ups are not permitted. It is either an STI or an Operations temporary procedure change.

[5] CREATE SEPARATE SUPPORT TASKS

- (a) If the work is determined to be on multiple divisions of equipment, create a separate work order to allow each division to be worked and restored independently. This will also facilitate equipment history recording and searching.
- (b) For support activities such as shop work, scaffold, asbestos abatement, or pipe preparation that is sequential (non-concurrent) work to support the lead discipline, a task will be created. As appropriate, activities should be planned as separate tasks (e.g., Erect Scaffold and Dismantle Scaffold are separate tasks, Remove Insulation and Replace Insulation are separate tasks). Dual schedule activities will be generated in the scheduling program to reflect the installation and removal of the respective support task. The following list is for guidance (this list is not all inclusive):
  - (1) Scaffolding Up/Down – see attachment 9.14 for creating and processing scaffolding tasks.

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5.2 [5](b) (cont.)

- (2) Insulation On/Off – use the work description section of the task to explain the location and amount of insulation removal required. Identify any special needs.
- (3) For other maintenance discipline activities to support the lead discipline, create a task for that discipline.
- (4) Create tasks for post maintenance testing in accordance with step [11] of this section. Consult operations and/or engineering to determine task requirements.
- (5) Create tasks as needed for LLRT and Radiography.
- (6) Create a separate task for Fire watch when it is non-concurrent with the implementing task.
- (7) Create separate tasks for pre-fabrication, bench calibration, breaker testing or other pre-work or pre-outage preparation.

[6] **PERFORM DURATION ESTIMATES:**

- (a) List the number of people and the Duration in the [Duration] field on the [Resource Requirements] tab.
  - (1) Incidental support requirements that are not addressed as separate tasks should be identified as resources to facilitate scheduling and department awareness. Examples of these resources are listed here (this list is not all-inclusive):
    - a. RP coverage
    - b. Security support
    - c. Chemistry support
    - d. Engineering support

[7] **IDENTIFY MATERIALS, PARTS AND SPECIAL TOOLS**

- (a) EN-DC-313 contains the guidance for reserving Q1, Q2 or Q3 level material that is not verified on the BOM. See attachment 9.12 for details of maintaining the BOM.
  - (1) Verified Items on a BOM may be used with no further action by the planner.

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5.2 [7] (a) (cont.)

- (2) If the item is on the BOM, is not verified but contains the correct reference to the controlled documents used to identify the part, the part will be reserved and used.
  - (3) If the item is not on the BOM and the reference documents used to identify the part are located, add the part to the BOM along with the reference documentation. The part will then be reserved and used.
  - (4) If the item is not verified on the BOM and controlled documentation cannot be located, contact procurement engineering for assistance and initiate an Engineering Change Request as appropriate.
  - (5) Q4 level parts approved for safety related applications will be validated by procurement engineering on the BOM.
- (b) List required materials in the [Materials request (MR)] section of the task, reserve by setting the [RSV] flag for reservation.
- (c) List additional materials that might be needed. Do not set the reservation flag for these items. This provides an easy reference for the craft if the additional material is needed. Make an informed and reasonable decision. Do not just add the entire BOM to every task.
- (d) If the required material does not have a catalog ID, generate a request for new material. See Guidelines provided in Indus User Guide IM-06 for new item initiation.
- (1) Initiate the documentation to add a chemical to the approved list for the station in accordance with Chemical Material Control Plan.
- (e) List special tools required on the tools page of the work order task.
- (f) Ensure Commercial Grade material testing (Dedication Plans, Evaluations, etc.) which must be performed as part of the field work are in the work instructions.
- (1) These items are identified by the S/P flag on the material reservation for the CAT ID. If there are special instructions required, the indicator will turn yellow.

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5.2 [7] (cont.)

- (g) Refer to attachment 9.5 for guidance regarding contingency parts. Coordinate with operations, implementing department, engineering and procurement to determine system impact, probability of need and availability of parts.

- (1) Reserve parts in accordance with attachment 9.5

**[8] ADD REQUIREMENTS AND NOTIFICATIONS**

- (a) View and add or delete requirements on the [Requirements] tab to communicate RP, Tag-out, Vendor and other issues that either trigger interface between other programs or make notifications to other departments.
  - (1) Add TAGOUT for tasks that will require a tagging order prepared in the eSOMS system.
  - (2) Add RWP to indicate that the RP/ALARA department should review and perform a dose estimate in accordance with the responsibilities section of this procedure.
  - (3) Add VENDOR for those tasks for which the implementing department uses off-site labor to perform or assist in performing. Maintenance will run a report as a notification to the maintenance department to schedule vendor support.
  - (4) Add the permit code for each permit that is applicable. The implementing department will be responsible to initiate and process these permits until such time that they can be processed in IAS in accordance with the permits processing step.
  - (5) In addition to requirements added by the planner, IAS will automatically transfer requirements listed for the equipment ID in the EDB to assist in planning and reviewing tasks. Based on the planned work scope, the planner will delete any of these auto-populated requirements that do not apply to the task.

**[9] DETERMINE PERMITS / REQUESTS NEEDED**

- (a) Plan, and route for approval those permits for which an Indus Asset Suite permit can be used. Create a permit request and attach an existing permit or plan a new permit and route to the applicable department for approval.
- (b) Identify other permits on the [Requirements] panel.

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5.2 [9] (cont.)

- (c) Consult the applicable permit procedure for more details on completion of permits. See Attachment 9.11 and Indus User Guide 3.2.5 for explanation and details of processing permits in Indus Asset Suite.
- (d) The following is a list of permits processed within IAS:
  - (1) Hot Work Permit
  - (2) Confined Space Permits
  - (3) Excavation (Ground Penetrating Activities)
- (e) Permits for model work orders will be identified in the [Requirements] section. The planner should include enough information in the notes section of the work order to allow a permit to be processed by planning/maintenance clerical staff with no further action by the planner.

[10] INITIATE ASSESSMENT

- (a) Prior to performing work, the impact of the work on components, systems and plant operation will be assessed. This assessment will consider:
  - (1) the status of the equipment during the work
  - (2) the effect of the work on components, systems and plant operation
  - (3) the impact of the work on interlocks, annunciators and control room indications
  - (4) any known contingencies (e.g. backup fire suppression)
  - (5) any known compensatory measures (e.g., for breaches of security systems)
  - (6) the impact on plant safety associated with performing the work
  - (7) the Technical Specification or Technical Requirement Manual (TRM) requirements associated with the work
- (b) Attach an Assessment in Indus Asset Suite and complete the component impact portion of the plant impact statement. See user guides for details.
- (c) See attachment 9.2 for directions in completing the component impact portion of the plant impact statement Assessment.

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5.2 (cont.)

[11] POST MAINTENANCE TESTING (PMT)

- (a) PMT tasks or work steps will be identified in the work package based upon the extent of maintenance performed. See references 20, 28 and 29 for guidance. A satisfactory test is one that verifies:
- (1) The ability of a particular component or system to perform its intended function and operate to its specified design criteria.
  - (2) The original deficiency has been corrected.
  - (3) No new or related problems have been created by the maintenance activity.
  - (4) The technical specification or Technical Requirements Manual operability of the equipment, if applicable.
- (b) If the PMT is performed as part of the work instructions (directly after all maintenance work is completed) a second task documenting a PMT is not required.
- (c) If the PMT is delayed until other components or systems are available, or if there is a significant placing/clearing of tags required after the maintenance work, a second task will be created to facilitate schedule coordination and tracking and to allow the work performance task to be closed in a timely manner.
- (d) Activities that require a separate PMT are identified by a flag on the additional details panel of the profiles panel in IAS. Checking the indicator will require the PMT task to be listed. This is the tie between the work task and PMT task in IAS. Therefore, the PMT task must either be created in advance of setting the PMT required flag or the planner must return to this panel to list the PMT task.
- (1) If an OPS retest is required, create a task for OPS to perform.
  - (2) If code programs testing (such as IST), is required, create a separate task.
  - (3) If functional or special testing is required per engineering, create a separate task.
  - (4) If a package is multidiscipline each discipline may require its own PMT task.

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### 5.3 WORK PACKAGE CONTENT

- [1] EN-WM-102 contains guidance for work package content. Tasks are prepared to meet the requirements contained in EN-WM-102.
- [2] Operating Experience
  - (a) The work planner should consider use of applicable, relevant INPO Just-in-Time Operating Experience as well as other applicable operating experience (OE) when planning work instructions. The information distilled from the OE should be incorporated into the appropriate instruction(s). A copy of the OE may also be provided to maintenance team/discipline leader(s) for future reference.
  - (b) See attachment 9.8 for guidelines on what activities should have OE searches performed.
  - (c) Planning Feedback should also be used as a source of operating experience where appropriate.

### 5.4 OBTAIN WORK PACKAGE APPROVALS/NOTIFICATIONS

- [1] Approval requirements for the work package should be commensurate with program/procedure requirements. Routing should only be used in those instances where it is procedurally required.
- [2] Approval requirements should be obtained by establishing routing list for approval. Examples of approval requirements are (this list is not all inclusive):
  - (a) Inspection results from MIC/EIC hold and witness points per EN-MA-102 as appropriate.
  - (b) Programs, Components and/or System Engineering as required for work on ASME, IST, Appendix J, Appendix R, AOV/MOV or EQ components.
  - (c) Repairs and replacements within ASME Code Section XI boundaries made in accordance with an approved repair/replacement program. Planning templates and macros may also be used to conduct Section XI impact evaluations.
  - (d) Any action required by a support group for the completion of planning.
  - (e) Implementing department for Elective or Corrective Maintenance Compliance packages.

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5.4 [2] (cont.)

- (f) Peer Review of work instructions for non-PM Safety Related Compliance Packages.
- (g) Packages returned via the routing approval process require comments on the [Task Notification Request] panel.

#### 5.5 PLANT EFFECT CODES

- [1] Plant effect codes are added to the work order task to identify the significance of the task to facilitate tracking and scheduling of work.
  - (a) Codes are usually applied by program owners or departments external to the planning department.
  - (b) Planning is not responsible for code maintenance. Planners should recognize that codes are important and not change them unless requested.

#### 5.6 ATTRIBUTES

- [1] Planners will list the programs and codes requirements as an attribute for use by the applicable departments to use as a reporting tool to review work upon completion.
- [2] Other attributes are used as additional information on a work order task by various program coordinators as a reporting and/or scheduling tool. Planners should recognize that these attributes are important and not change them unless requested.

#### 5.7 REVISIONS

- [1] When the scope of the work changes from that originally planned, determine if new instructions or PMT are necessary and if the work document classification still is adequate. Scope changes should be subject to the same level of reviews as the original planning of the task.
  - (a) Scope changes should have the task RETURNED in IAS for planning to correct. Contact planning prior to using the RETURNED option.

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5.7 [1] (cont.)

- (b) Returning the task will cause any assessments to be reset (IAS will create a revision and place the assessment "Hold" back on that task or tasks). This will require the assessment to be completed and approved again. In addition, using the RETURN option will clear the level of Control Room Communications field which will then need to be set manually since it is a required field

[2] Editorial changes during work should be made by the implementing department supervisor and included in work order close-out documentation.

- (a) Editorial changes should NOT use the RETURN option in IAS.

## 5.8 PLANNING FEEDBACK

[1] Action Tracking will be utilized to record feedback.

[2] Feedback should be provided at work closeout and when packages are returned during the package acceptance process.

[3] Trending of the data and information provided as work package feedback should be conducted. Planning feedback should be reviewed periodically for:

- (a) Quality of work packages
- (b) Improvement opportunities
- (c) Lessons learned

[4] At a minimum the planning superintendent/supervisor should perform a quarterly review of the feedback content and perform appropriate corrective actions.

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## 6.0 INTERFACES

- [1] Indus Asset Suite/INDUS
- [2] ESOMS
- [3] Paperless Condition Reporting System (PCRS)
- [4] Engineering Change Indus Asset Suite Module
- [5] Action Tracking Indus Asset Suite Module
- [6] EDMS System (Merlin/Ideas)
- [7] Reference Library
- [8] Operating Experience

## 7.0 RECORDS

- [1] The following required records resulting from this procedure are controlled and maintained.
  - (a) Work Package

## 8.0 OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES

Document	Document Section	Procedure Section	Site Applicability
QAPM	A.6.a	4.0 [3]; 5.4 [2]	EN
QAPM	B.1.c	5.3	EN
QAPM	B.4.d	5.7	EN
QAPM	B.8	5.13	EN
QAPM	B.11	5.8	EN
QAPM	B.12	4.0 [3] (f)	EN
QAPM	B.14	Entire procedure	EN
QAPM	B.15	7.0	EN
Pilgrim Ltr 2.92.-106	Page 3 bullet 5	5[2]; Att. 9.4	Pilgrim

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## **9.0 ATTACHMENTS**

- 9.1 WORK INSTRUCTIONS
- 9.2 COMPONENT IMPACT TEMPLATE
- 9.3 OPERATIONAL IMPACT FORM
- 9.4 DELETED
- 9.5 CONTINGENCY PARTS ASSESSMENT CHART
- 9.6 DELETED
- 9.7 LEVEL OF DETAIL DETERMINATION
- 9.8 GUIDELINES FOR INCLUDING OPERATING EXPERIENCE
- 9.9 DELETED
- 9.10 WORK ORDER CODES
- 9.11 PROCESSING PERMITS IN INDUS ASSET SUITE
- 9.12 DIRECTIONS FOR MAINTAINING BOM
- 9.13 APPROVED WORK STANDARDS FOR USE IN INDUS ASSET SUITE
- 9.14 SCAFFOLDING TASKS
- 9.15 SKILL OF THE CRAFT
- 9.16 PERIODIC REVIEW OF WORK ORDERS
- 9.17 JUMPER AND LIFTED LEAD INSTRUCTIONS

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1. Purpose and Scope
  - 1.1. Clearly state the purpose and scope of work to be performed. Purpose should consist of a statement or short paragraph explaining why the work instruction exists. Scope should consist of a statement or short paragraph explaining applicability of the work instruction's content.
2. Precautions and Limitations
  - 2.1. Precautions and limitations should be written to inform the craft of hazardous conditions to be avoided and boundaries not to be exceeded. Include hazardous conditions that may exist during the task or be encountered at some point during the task. If actions are required by craft labor to respond to precautions or limitations, provide action steps at the appropriate location in the detailed task instructions. Do not include generic precautions or expectations that are part of a job description or inherent to the task to avoid unnecessary confusion. If warranted by severe consequences or other similar reasons, include warnings and cautions before the applicable steps.
3. Prerequisites
  - 3.1. Prerequisites provide the actions to be completed (or verified) and signed off before proceeding with the performance of the next or main task. The planner should arrange the actions in the proper sequence for the performance, and they should include any required field preparations or notifications such as:
    - 3.2. Establishing the appropriate system or equipment alignment and power supply
    - 3.3. Confirming operability of systems and components before removal from service
    - 3.4. Installing portable communications equipment
    - 3.5. Preparing special test equipment, prefabrication requirements or pre-testing.
    - 3.6. Identifying needed support services
    - 3.7. Verifying completion of other tasks that must be performed before proceeding with the current task
  - 3.8. Special qualifications and skills

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### 3.9. Work Plan Details

- 3.10. Instructions should provide logical step progression and format throughout the written instructions to minimize confusion in the field. Compliance Package instructions should be written in the order to be performed. If the instructions can be performed in any logical order, then this should be stated at the beginning of the instructions.
- 3.11. Notes, Warnings and Cautions should be listed before the step or section of steps to which they apply.
- 3.12. Critical steps shall be uniquely identified with space provided for sign-off upon completion.
- 3.13. Use approved plant procedures and technical manuals from the IDEAS/MERLIN reference library where possible when writing instructions. Example steps are:
- 3.14. Cal transmitter in accordance with procedure 2-IC-N-L-1101. Document results on the Instrument Calibration Record.
- 3.15. Remove housing end cap in accordance with vendor manual 2525, section 5.3.
- 3.16. Include acceptance criteria and sign-offs. Examples are:
- 3.17. Part and component orientation
- 3.18. FME/Cleanliness of systems prior to closing
- 3.19. Critical dimension checks
- 3.20. As-left trip set-points
- 3.21. Restoration of lifted leads and jumpers
- 3.22. Torque values
- 3.23. Restoration
- 3.24. List the PMT steps or identify the task for the PMT. The intent is to strike a balance between simplicity for the craft and schedule coordination.
- 3.25. If the PMT is performed within the procedure or reference document used by the craft and will not be delayed for a significant period of time in order to return a system to service, the working task should include the PMT instructions and reference itself on the PMT Details panel. Otherwise write a separate task for PMT implementation and scheduling.

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(Directions for completing the Assessment)

NOTE: Use the Assessment in IAS titled "Plant Impact Statement". This form is only to be used for directions on completing the assessment or if IAS is unavailable.

### **COMPONENT IMPACT**

*(This component impact is completed by a Planner)*

#### **WORK SCOPE:**

*The task description is written in a manner to provide a clear, concise work scope.*

Will the equipment be out of service?

*If so, answer yes and enter a description of what the isolation expectations are including logic, fluid, pressure and electrical protection. Examples are: task requires electrical isolation; task requires pump isolated, vented and drained. List any qualifying information from field experience that will assist the tagging center in preparing a tag-out. To prevent duplication of data and to reduce Human Errors; Equipment ID numbers, breaker numbers, valve numbers, etc., are identified by the Tag-out preparer.*

Are other components directly affected by this work activity?

*If so, answer yes and list in the space provided.*

Are alarms or computer points affected?

*If so, answer yes and list the affected computer points.*

Are there additional tagging requirements?

*If so, answer yes and follow up by addressing each of the lower-tier responses required under this question.*

Are fuses or leads pulled or lifted? *If so, answer yes and identify for tagging.*

Is grounding required? *If so, answer yes and identify grounding for tagging.*

Do support systems require isolation? *If so, answer yes and identify special requirements for tagging (i.e., isolate cooling water and lube oil, isolate space heater, etc.).*

Is this component electrically connected to an instrument bus?

*If so, answer yes, list the affected bus..*

Is there a proximity risk?

*Identify any equipment in the area (usually within 6 feet) that presents a risk to generation.*

Is there a reactor trip risk?

*List the equipment and function presenting the risk.*

Is a security, fire, or control envelope breach required?

*Identify if work is an envelope breach. .*

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(Directions for completing the Assessment)

NOTE: Use the Assessment in IAS titled "Plant Impact Statement". This form is only to be used for directions on completing the assessment or if IAS is unavailable.

**OPERATIONAL IMPACT**

*(This page of the impact is completed by an SRO or individual with appropriate Operations experience as designated by the Operations Manager)*

\_\_\_\_\_/\_\_\_\_\_  
SRO                  DATE

**Technical Specifications**

*Technical Specifications associated with the affected systems/components should be identified, along with any comments regarding the impact of the maintenance activity on the equipment operability. This should provide a basis for any AOT/LCO entry required due to the work being performed.*

*If entry into an AOT/LCO is required, ensure that a requirement type LCO is entered on the REQUIREMENTS panel of the work order task to trigger the tagging interface that an AOT/ LCO tracking item is required in ESOMS.*

Is there a reactivity impact?

*Potential effects to reactivity or systems important to reactivity that the work might create should be listed along with any compensatory actions to be taken.*

Potential System/Component Effects?

*Describe any additional effect that the work will have on the plant/system, beyond those identified in the component impact statement. Only the potential effects appropriate for the plant mode/plant condition that the work is to be performed in (e.g., on-line, system outage, in-service) should be addressed.*

Actual or Potential Contingency Measures Required?

*List any actual or potential measure or contingency action required due to the work being performed. Include a summary of any work instructions necessary to allow work to be performed while the plant is in the anticipated mode of operation. Verify restoration steps are incorporated into the work instructions to return systems/components to the desired configuration following the maintenance activity.*

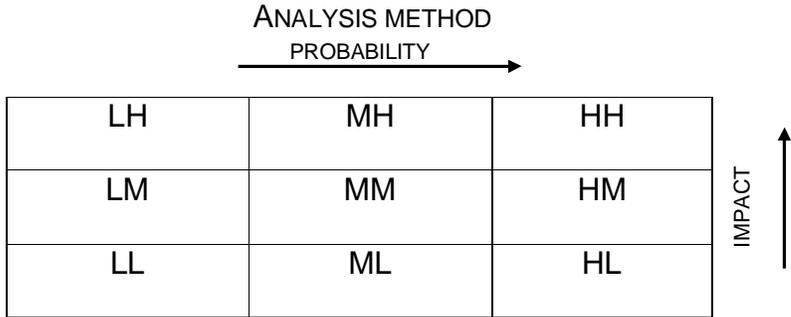
Is there a potential for a loss of offsite power?:

*Any actual or potential measure or contingency action that may be required due to the work being performed. Include a summary of any work instructions necessary to allow work to be performed while the plant is in the anticipated mode of operation/plant condition.*

Is power reduction required?

*Ensure power reduction is communicated and scheduled.*

(Typical)



IMPACT	PROBABILITY OF EVENT	ACTION
H	H	Add material and reserve
H	M	Add material and reserve
H	L	Do NOT add material
M	H	Add material and reserve
M	M	Add material, do not reserve
M	L	Do NOT add material
L	H	Add material, do not reserve
L	M	Do NOT add material
L	L	Do NOT add material

Event – A circumstance where proposed contingency materials are warranted.

**High**

The event has occurred, or almost always occurs, under similar circumstances

**Moderate**

The undesirable event often occurs

**Low**

Event rarely or occasionally occurs



**Planning**

**ATTACHMENT 9.7**

**LEVEL OF DETAIL DETERMINATION GUIDELINES**

**Sheet 1 of 1**

This table provides guidance for determining the most appropriate type of work package (Levels 1 or 2), or for identifying those circumstances when a work package may not be required at all (Level 3). The user should recognize that the level designation refers to the work planner's level of effort and rigor needed to prepare an appropriate work package, not necessarily the amount of information in the package itself.

Determining Factor or Criteria	Level 1 (Compliance Work Package)	Level 2 (Reference Work Package)	Level 3 (Minor Maintenance – Work Instructions Not Required)
Complexity of the task Frequency with which work is performed (See note)	Complex task Performed infrequently >one fuel cycle	Simple task Performed frequently <one fuel cycle	Simple task Performed frequently <one fuel cycle
Availability of technical procedure(s) defining the work	Procedure is deemed necessary, but does not already exist	Procedure is deemed necessary, but is available and is sufficient	Technical procedures are typically not needed
Risk of unit/generator trip or transient	Work presents high risk of single failure or errors causing unit/generator trip or transient	Work presents low risk of single failure or errors causing unit/generator trip or transient	Work presents no risk of single failure or errors causing unit/generator trip or transient
Risk of lost generation	High risk	Low risk	No risk
Risk of entry into a LCO/AOT or work using >50% of allowed LCO time	Work presents high risk of entry into a LCO/AOT	Work presents low risk of entry into a LCO/AOT	Work presents no risk of entry into a LCO/AOT
Personnel safety and ALARA	Work presents high risk to personnel safety or ALARA	Work presents low risk to personnel safety or ALARA	Work presents no risk to personnel safety or ALARA
Need for special controls	Yes	Possibly	No
Reliance on skill of the craft	Minimal reliance on skill of the craft	Some reliance on skill of the craft	High reliance on skill of the craft
Program requirements (MOV, AOV, ISI, IST)	Program requirements may be affected	Program requirements may be affected	No impact on program requirements

Note: The complexity of the task and the frequency with which it is performed both effect the probability of quality work being repeated on a consistent basis each time that task is performed. As such, the planner should consider these factors when determining the type of work package and the subsequent level of detail communicated to the craft labor.

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ATTACHMENT 9.8

GUIDELINES FOR INCLUDING OPERATING EXPERIENCE

Sheet 1 of 1

<b>Adverse Results – Could the activity result in adverse impact to plant operations, events or personnel?</b>	
<b>Plant operations</b>	Unit shutdown, unit down-power, turbine runback, ESF actuation, or containment or control room isolation
<b>Events</b>	Reactivity, security breach, or technical specification violation
<b>Personnel</b>	ALARA concerns, safety or environmental hazards
<b>Potential for Errors – Does the performance of the activity create an error-likely situation?</b>	
<b>Equipment</b>	<p>The equipment is sensitive and the design/configuration makes access restrictive.</p> <p>The equipment has common or shared elements with in-service sensitive equipment such as daisy-chained wiring, multiple wires on single-terminal, common manifolds, or common sense lines with might be affected.</p> <p>The location is in close proximity to in-service sensitive equipment and there is potential to trip the equipment.</p> <p>The equipment is a complex new installation and personnel have minimal experience on this equipment.</p>
<b>Test Equipment</b>	<p>Test equipment may affect performance of in-service sensitive equipment (e.g., impedance).</p> <p>Test equipment will be connected to in-service sensitive equipment without test ports.</p> <p>The test equipment may inject signals into in-service sensitive plant equipment.</p>
<b>Task</b>	<p>The task requires manipulation of in-service sensitive equipment.</p> <p>The activities are complex, require multiple actions with close coordination, involve multiple locations with close communications, or involve varied integrated actions by multiple groups.</p> <p>The activity involves complex electrical/electronic equipment without detailed work steps.</p>
<b>Personnel</b>	Personnel are not familiar with the specific equipment. Personnel experience is marginal for the specific activity.
<b>Instructions</b>	<p>The activity is complex and the written technical instructions are general.</p> <p>Technical conduct of the activity relies significantly on direction by knowledgeable individuals.</p>
<b>Adverse Consequences from these Errors – Could errors during the activity result in adverse impact to plant operations, events, personnel or other equipment?</b>	
<b>Plant Operations</b>	<p>Unit trip, unit down power, turbine runback, ESF actuation, containment or control room isolation, trip in-service safety-related equipment, start stand-by safety-related equipment, or cause other functional safety-related equipment to become inoperable</p> <p>Trip in-service equipment necessary for power generation</p> <p>System interactions which could cause perturbations in power generating system</p>
<b>Events</b>	Environmental, reactivity, RCS drain down, security, unplanned TS LCO entry, plant transient, technical specification violation, unplanned TRM, or ODCM action entry
<b>Adverse Impact of Task on Equipment – Is the activity a complex maintenance task or could failure of the task cause an inadvertent component actuation?</b>	
<b>Passive Data Collection – Does the activity involve non-passive data collection (e.g., more involved than visual inspections, readings taken from readily accessible points, or vibration measurements)?</b>	



**Planning**

**ATTACHMENT 9.10**

**WORK ORDER CODES**

**Sheet 1 of 1**

WO TYPE		JOB TYPE		TASK TYPE		PACKAGE TYPES		PM CAT CODES	
(R100 WO Panel)		(R101 Pro Panel)		(R100 - R103 Schd Rqd - R116 Panel)		(R111 Panel Work Package Type)		(D081 Panel)	
PM	Periodic	AD	Administrative	AOV	AOV Program	Compliance	1	ADMI	Administrative
WO	Planned	CM	Corrective	BETR	Betterment	Reference	2	ECPM	Critical PM
MD	Modification	CT	Contingency	BNCH	Bench Testing	Minor Maintenance	3	ECRA	Commitment / Code Related
MM	Minor MTC	EC	Preventive - Engr Controlled	CAL	Calibration			EEO	Equipment Qualification
MO	Model	EM	Elective	CHK	Check			EISI	In-service Inspection
RP	Repair	MC	Preventive - Maintenance Controlled	ET	ECT Eddy Current Test			EIST	In-service Testing
UP	Unplanned	OD	On Demand	HX	Heat Exchanger			EMPM	Mandatory PM
		OT	Other	INSI	Insulation - Install			ESTP	Surveillance Testing
		PD	Predictive	INSP	Inspection			NCPM	Non-Critical PM
		SP	Support	INSR	Insulation - Remove				
		ST	Surveillance	ISM	In Storage Mtc.				
		TT	Test	LRI	Leak Repair - Install				
				LRR	Leak Repair - Remove				
				LU	Lubrication				
				MDM	Minor Def Monitoring				
				MONT	Monitoring				
				NDE	NDE/Radiography				
				OAN	Oil Analysis				
				PFAB	Prefabrication				
				REB	Rebuild				
				REL	Relief				
				REP	Repair				
				RPLC	Replacement				
				SCFD	Scaffold - Down				
				SCFU	Scaffold - Up				
				SEC	Security				
				SFAC	Station Facility				
				SHOP	Shop				
				THM	Thermograph				
				TMI	Temp Mod. Install				
				TMR	Temp Mod. Remove				
				VIB	Vibration				

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1. A permit consists of three things.
  - 1.1. Identify the specific work that is the reason for the permit.
  - 1.2. Identify the hazards and risks associated with performing that work.
  - 1.3. Identify the control measures required to keep the worker safe from those hazards.
2. The Indus Asset Suite process is summarized here, see User Guide WM 3.2.5 for more details.
  - 2.1. For permits generated in planning associated with a work order task the planner will:
  - 2.2. Create a permit request. The permit request is the vehicle that links a task to a permit.
    - 2.2.1. Set the permit request to Ready status.
    - 2.2.2. If an existing permit can be used, attach that permit.
    - 2.2.3. If no permit exists, create a permit.
      - 2.2.3.1. Enter the specific task description.
      - 2.2.3.2. Enter the hazards and risks in accordance with the applicable permit procedure.
      - 2.2.3.3. Enter suggested control measures.
    - 2.2.4. Route the permit request and permit to the applicable approval department
  - 2.3. The approval department will:
    - 2.3.1. Review the permit and the work order task.
    - 2.3.2. Make any required changes to the permit.
    - 2.3.3. Verify control measures and add information as required.
    - 2.3.4. Approve the permit.
    - 2.3.5. Perform revalidation of the permit when needed.
  - 2.4. Depending on the requirements and restrictions in the IAS permit, the permit user will:
    - 2.4.1. Make notifications in accordance with the permit and/or permit procedure.
    - 2.4.2. Complete any forms required by the permit.
    - 2.4.3. Have the permit re-validated by the approval department as needed.

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2.4.3.1. The permit and/or permit procedure provides guidance on the revalidation required. The permit has an expiration date indicating the need to have revalidation performed.

2.4.4. Print the permit and include in work package documentation as required.

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Attachment 9.12 Directions for Maintaining the BOM

Sheet 1 of 2

Planning is responsible for maintaining the BOM for Q4 applications. The Q4 BOM will not be verified by Procurement Engineering.

Any non-consumable material reserved should be added to the BOM for that equipment ID.

1. Find the equipment on the D030 panel using the Equipment Number.
2. The manufacture number and model can be found under the [INSTALL] button, which takes the user to the D034 panel.
3. Write down the manufacture and model number exactly as it is shown.
4. On the D034 panel, prompt on the correct BOM number (this number is the BOM version number) and select more detail.
5. You will now be on the D090 panel in the view mode. If the CAT ID is listed on this panel and verified, then the item has been verified as applicable for the component. If the answer is NO, proceed.
6. Add CAT ID to BOM.
  - a. Go to the navigation box and type in D090. This will navigate to a panel that is capable of being modified. Type in the Manufacturer and Model number. Hit enter.
  - b. The Catalog ID field is now open. Add the CAT ID(s) to the list. Press ENTER.
  - c. Fill in the [BOM Quantity] block with the appropriate quantity (1 can always be used as a default). Expand Rows as needed. Add additional information in the [Other BOM Description] block. This is used to document the drawing, technical manual, previous work order, CGE number, etc. used to validate the part.
  - d. If the [Desc] block at the top of the panel is "conversion shell", change the description. This block should describe the component. Use the catalog format, like Valve, globe, ½". Press ENTER.
7. Add the Q level of the CAT ID and check the verification button.
  - a. Go to the D030 panel for the equipment number, click on the [INSTALL] button.
  - b. On the D034 panel, prompt on the BOM Version number in the second block of the panel, (usually000), select more detail.

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- c. You should now be on the D090 panel for the BOM associated with the component. You may have to check the control box (the far left blue box for each CAT ID) to allow access to the blocks.
  - d. Fill out the “Q” block with the CAT ID Q level (1, 2, 3, or 4). Add notes such as drawings, CGE and tech manual info to the [Other BOM Description] block.
  - e. Save and Close (click OK).
8. To verify this CAT ID for multiple components, go to the D200 panel for the CAT ID.
- a. Click on the [BOM] button.
  - b. This places you on the D092 [BOM WHERE USED ANALYSIS] panel.
  - c. Select the appropriate BOM version by checking the control box at the far left hand side of the panel.
  - d. Select Options 02 “Navigate To PE BOM Where Used By Equip”. This panel (Q115) lists all the components that have the same make and model as listed on the D030 equipment data base.
9. Engineering will run a report for Q1, Q2 or Q3 level material, review the documentation listed and perform BOM verification.



**Planning**

ATTACHMENT 9.13

APPROVED DOCUMENT STANDARDS FOR USE IN INDUS ASSET SUITE

Sheet 1 of 1

Standard Number	Title	Description
	ACTIVITY LOG	LOG SHEET FOR CRAFT NOTES DURING WORK (TEMPLATE)
	FUSE REMOVAL/REPLACEMENT LOG	FUSE REMOVAL TRACKING (TEMPLATE)
	CIRCUIT CARD REMOVAL	CIRCUIT CARD REMOVAL (TEMPLATE)
	COMPONENT REMOVAL TRACKING	COMPONENT REMOVAL TRACKING (TEMPLATE)
	TUBING REMOVAL	TUBING REMOVAL (TEMPLATE)
	VALVE MANIPULATION	VALVE MANIPULATION AND RESTORATION FROM (TEMPLATE)

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- [1] The planner will create two tasks – one to erect the scaffolding and one to remove the scaffolding. The remove scaffolding task should be set to ready status.
- [2] In the work description for the erect scaffolding task, list the specific information to build the scaffold. Use the following as a check-list:
  - (a) Describe the scope of work,
  - (b) If known, identify special rigging needs,
  - (c) If known, identify weight requirements for rigging and loading as needed,
- [3] Attach any supporting documentation such as pictures.
- [4] For those tasks where a proximity risk exists, the planner will attach an Assessment to notify operations that this scaffolding will be built within 6 feet of plant trip risk or safe shutdown equipment.
- [5] Route the task to the scaffolding group or coordinator.
- [6] The scaffolding group/coordinator will contact the implementing department to confirm scaffolding requirements. Any tracking databases can be updated to reflect material needs at this time.
- [7] Do not delete duplicate tasks on other work orders. The scaffolding group will work with the schedulers to identify duplicate tasks and identify as such in the schedule.
- [8] When the scaffolding task is ready to support the task, they will approve the task. Subsequent routing, holds and requirements are released according to other standard processes..
- [9] For Operations' Tagging Activities, each site should create two work orders each cycle for Routine Operations Tagging Activities – one for on-line work and one for outage work. Operations will communicate with planning to add tasks as necessary for scaffolding to support tagging. Follow the steps above for creating these tasks.



**Planning**

**ATTACHMENT 9.15**

**MINIMUM EXPECTED SKILLS OF THE CRAFT**

**Sheet 1 of 2**

Work Activity	Mechanical	Electrical	I&C	Service	HVAC
Air filter, motor – Replace	X				X
Bolts – Tighten	X	X	X		X
Cable raceways - Adjust or replace screws		X			X
Calibration (Electrical meters/transducers, pneumatic timing tools)			X		X
Circuits – Check voltage and current measurements		X	X		X
Computer inks, paper, recorders, etc. – Replace			X		X
Conduit covers, brackets and screws – Replace, grease and lubricate		X			X
Corrosion (abrasive or chemical) – Remove	X			X	X
Crimp connectors – Install or remove		X	X		X
Doors (non-security/fire protection) – Replace or repair knobs, locks, hinges, closures, flushbolts, etc.	X			X	
Drains – Blow-out, clear	X			X	X
Extension cords – Plug in and use	X	X	X	X	X
Fasteners – Cut to length	X	X	X		X
Fencing – Rework or replace	X			X	
Filters – Replace/clean	X	X	X		X
Gaskets – Replace	X	X	X		X
Grating and grating clips – Rework and replace	X			X	X
Greasing	X	X			
Handrail barriers – Rework or replace	X			X	
Handwheels – Replace or rework	X				X
Housekeeping, general-cleaning, inspection	X	X	X	X	X
Instrument fittings – Replace			X		X
Instrument isolation valves – Rework or replace handwheels	X		X		X
Instrument tubing – Rework or replace support clips, screws, spring washers, shims	X		X		X
Instrument tubing – Tighten	X		X		X
Electrical insulation – Check resistance		X	X		X
Insulation – Rework and replace screws/ bands				X	X
Lenses and caps - Replace		X	X		X
Light bulbs – Replace		X	X		X
Lubrication	X	X			
Masonry – Rework	X			X	
Non-skid applications	X			X	
NSR bolts – Replace with identical item only	X				
NSR convenience outlets – Rework or replace		X			X
NSR Fuses – Replace with identical item only		X	X		X
NSR Junction Boxes – Replace gaskets, covers or screws, latches		X	X		X
NSR Light fixtures – Rework or replace		X		X	X



**Planning**

**ATTACHMENT 9.15**

**MINIMUM EXPECTED SKILLS OF THE CRAFT**

**Sheet 2 of 2**

Work Activity	Mechanical	Electrical	I&C	Service	HVAC
NSR Nameplates, tags, cover-plates, inspection plates – Replace		X	X		X
O-rings – Replace	X	X	X		X
Pipe flanges – Tighten to stop leakage	X				X
Plug-in components – Replace		X	X		X
Pumps/Motors – Add oil or grease	X	X			X
Pumps – Adjust packing	X				X
Refrigerant – Trim charge		X		X	X
Refrigeration – Remove oil from refrigeration plants		X		X	X
Roofing – Rework, non-fire barrier-asphalt, metal, etc.				X	
Seals – Replace	X				X
Soldering (piping and wiring)	X		X		X
Stairs – Rework (nosings, steps, handrails)	X			X	
Telephone/Plant paging system – Rework or replace handles, knobs, switches		X			
Threads – Clean (mechanical means)	X				X
Tubing – Install (except on seismic restraints), fitting, makeup	X		X		X
Turbine diaphragms – Seal with RTV/VIP to stop in-leakage	X				
Valve lapping	X				X
Valve packing (manual) – Adjust	X				X
Valve stems (manual) – Lubricate	X				X
Walls (non-fire barrier-gypsum, plaster, metal, concrete) – Rework				X	
Welding/Brazing	X				
Wire wrapping – (except on printed circuit boards)		X			X

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### Periodic WO review

**Overview** :During the Work Management process it is possible that through changes in plants needs and process improvements that some work instructions that were adequate at time of initial planning would not be up to current plant standards. A periodic review of these work items will ensure that work packages are up to date with process and plant changes that occur during the course of time.

1. Periodically , not to exceed one year, the planning supervisor will run a report to identify all compliance WO(s) in the “ready” status that are greater than 2 years in age for on-line work and greater than 2 refueling outages (2R) for outage work.
2. The identified WO(s) will be taken to a “Suspend” status in Passport. As the WO(s) show up in the T-minus process, planners will review them to determine if any changes are needed. Any needed changes will be made in time to comply with T-schedule milestones for planning readiness.
3. Work Tracking (WT) function of PCRS will be used to track the actions taken each year and ensure that the review is performed at least annually.

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### **GUIDANCE PERTAINING TO WORK ORDER INSTRUCTIONS FOR THE INSTALLATION OF JUMPERS AND LIFTING LEADS**

The installation of jumpers should be identified prior to implementation in the field. Jumper installation instructions will be clearly documented in either the implementing procedure or Work Order that is performing the activity. This is to ensure that an adequate operations assessment can be performed and impact statement developed. If the jumpers are being installed to maintain a system or component in an operable status then a temporary alteration should be used per DC-316.

When work involves the lifting of leads, specific work instructions including terminal connection points are required when the component is NOT tagged out\* AND any of the following criteria are met;

- 1) The component is located in any circuit that could lead to a direct reactor trip.
- 2) The component is located in any circuit that could lead to an actuation of any safety system.
- 3) The component is located in any circuit that could lead to main turbine trip.
- 4) The component is known to be connected in such a manner, as to adversely affect other components, if disconnected from circuit. (i.e. Daisy Chained)

\*Tagged Out includes coil and contact leads of a relay, but not necessarily annunciator leads.

Plug in type relays are exempt (ice cube/relays with paddles).

Troubleshooting activities will follow the requirements of the troubleshooting procedure EN-MA-125 and are not covered under this guidance.