

US Nuclear Regulatory Commission, RII  
2008 Exam Writers Work Shop  
*“Communicating Expectations  
- Achieving Consistency”*



# Understanding Job Performance Measure's - (JPM) - *CRITICAL STEP's*

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# JPM References

- NUREG -1021, Rev. 9 Supp. 1, Appendix C, "Job Performance Measure Guidelines," B.3 "Develop Performance Criteria."
- 10CFR45(a) requires ... "operators/senior operators to demonstrate an understanding of and ability to perform actions...."

# JPM Requirements

- JPM's:
  - Should have meaningful performance requirements.
  - Single one-step JPM's or JPM's that directly look-up the correct answer are not appropriate.
  - Shall identify specific performance standards, that will allow the examiner to evaluate successful as well as less than successful performance.

# JPM *CRITICAL STEP*

## Definition

- Every procedural step the examinee MUST perform correctly to accomplish the **task standard** shall be identified as a *CRITICAL STEP* and shall have an associated performance task standard.
- *CRITICAL STEP's* are required to be done accurately, in proper sequence, and at the proper time for it's performance to be evaluated as satisfactorily.

# JPM Elements

## Appendix C, Rev. 9 Job Performance Measure Form ES-C-2 Quality Checklist

- Every JPM should:
- 1. \_\_\_\_\_ be supported by the facility licensee's job task analysis.
- 2. \_\_\_\_\_ be operationally important (meet the NRC's K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
- 3. \_\_\_\_\_ be designed as either SRO only, RO/SRO or AO/RO/SRO.
- 4. \_\_\_\_\_ include the following, as applicable:
  - a. \_\_\_\_\_ initial conditions
  - b. \_\_\_\_\_ initiating cues
  - c. \_\_\_\_\_ references and tools, including associated procedures
  - d. \_\_\_\_\_ validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
  - e. \_\_\_\_\_ operationally important specific performance criteria that include:
    - (1) \_\_\_\_\_ expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
    - (2) \_\_\_\_\_ system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
    - (3) \_\_\_\_\_ statements describing important observations that the examinee should make
    - (4) \_\_\_\_\_ criteria for successful completion of the task
    - (5) \_\_\_\_\_ **identification of those steps that are considered critical**
    - (6) \_\_\_\_\_ restrictions on the sequence of steps

# JPM's

- Should have meaningful performance requirements.
- Shall NOT test solely on simple recall or memorization.
  - ❖ Immediate Operator Actions (IOAs) are acceptable.

# JPM Layout

- Should mimic the associated procedure **exactly**.
  - ❖ It is not required to have the same numbering system, but it helps us during the evaluation.
  - ❖ Do not leave out steps that do not apply. Leave them in and mark N/A. OR add information where in the procedure the next step is.
  - ❖ *Critical Steps* should be identified to ensure they are evident to the examiner.



# JPM Layout

- Examiner Cues:
  - ❖ Should identify appropriate system *response cues* in-order for the examiner to provide specific feedback associated with the applicants actions.

For example:

- ❖ The valve is CLOSED, is NOT acceptable.
- ❖ This should read: "The valve stem is completely in and when it went in, the hand wheel came to a hard stop. It should try to represent what actually happened.

# JPM Critical Steps

- For a step to be a Critical Step (**CS**), not doing the step the task standard can not be accomplished.
- If it has no effect in accomplishing the task then it can not be considered critical.

These include:

- ❖ IF the procedure step states “Ensure” valve XX is closed. And the valve is actually closed, then this is NOT a **CS**.

# JPM Critical Steps

- ❖ If the step states "Close" the valve and its closed, its not a **CS**.
- ❖ If the step states "Open" the valve and its open, its not a **CS**.
- ❖ If the step states "observe," or some other descriptor that does not require an action, then it is not a **CS**.
- ❖ If an action is directed to a field operator, this is a **CS**, if not doing so would prevent the task standard from being accomplished.

# JPM Critical Step - Examples

## Example of a Faulted Step:

STEP 1: START the 1B Auxiliary Feedwater Pump (Steam Driven Pump)

STANDARD: OPEN MV-01-11, B MS to 1B AFW Pump

Isol. AND/OR OPEN MV-01-12, A MS to 1B AFW Pump Isol.

**EXAMINERS NOTE: 1B AFW will trip on electrical Over speed**

COMMENTS:

**FAULTED** STEP \_\_\_\_\_ SAT \_\_\_\_\_ UNSAT

Even though the pump was required to be started, the action did not do anything. This action was not considered critical.

# JPM Critical Steps

Good Example of a Critical Step:

- \*4 (**Step 1.a.3**) Use kirk key and close breaker 1EMXA4-3A (1EMXA4 Incoming Bkr (Alternate) From SMXG MCC) Operator inserts kirk key in Breaker 1EMXA4-3A.
- (Simulates) Operator closes Breaker 1EMXA4-3A. (Simulates)
- Cue: Kirk key inserted and switch rotated clockwise.
- Stop Time for Time Critical Task #1: \_\_\_\_\_

In this example, the JPM step 4, identifies the actual procedural step, (**Step 1.a.3**).

The asterisk (\*) shows that this step is a critical step.

# JPM Critical Step - Examples

- Administrative JPM's:
  - ❖ Shut down margin
  - ❖ Critical Rod Height
  - ❖ Radiological Releases
  - ❖ Radiological Exposure Calculations
  - ❖ QPTR

# JPM Critical Steps

- The NRC evaluates the **PROCESS** used to determine the answer not just the answer.
- If the answer was correct, because of offsetting errors, the individuals are graded as unsatisfactory. Therefore, ALL steps are considered to be critical steps.

# JPM Critical Steps

QUESTIONS?