



Region III Operator Licensing Workshop

May 3 - 4, 2006

AGENDA



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Day 1 - Wednesday, May 3		
Time	Topic	Speaker
7:30 - 8:00	Registration	N/A
8:00 - 8:05	Introduction	Hironori Peterson Chief, Operations Branch, DRS, RIII
8:05 - 8:15	Welcome Address	Cynthia Pederson Director, Division of Reactor Safety, Region III
8:15 - 8:45	Opening Remarks & Region III Activities	Hironori Peterson & Mark Trump, Training Manager, Davis-Besse
8:45 - 9:00	Break	
9:00 - 9:45	Root Cause Evaluation Adequacy of Training Program	Clinton
9:45 - 10:30	Root Cause Evaluation Exam Validation Process	Palisades
10:30 - 10:45	Break	
10:45 - 12:15	Breakout Session - Period 1	Various
12:15 - 1:00	LUNCH	
1:00 - 2:30	Breakout Session - Period 2	Various
2:30 - 2:45	Break	
2:45 - 4:15	Breakout Session - Period 3	Various
1:00 - 4:00	Training Managers Retreat	H. Peterson
4:15 - 4:30	Summary/Recap	

**Day 2 - Thursday, May 4**

Time	Topic	Speaker
7:30 - 8:30	Simulator Issues	Larry Vick
8:30 - 8:45	Break	
8:45 - 9:45	Operator Licensing Issues	Siegfried Guenther
9:45 - 10:30	Administrative Issues	Mary Ann Bies
10:30 - 11:00	Question/Answer/ Open Discussion	S. Guenther/L. Vick/M. Bies
11:00 - 11:15	Break	
11:15 - 12:45	Breakout Session - Period 4	Various
12:45 - 1:30	Lunch	
1:30 - 2:30	Open Forum / Discussion Topical Summary	Various
2:30	Closing	H. Peterson/M. Trump



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Session	Topic
Period 4 Hironori Peterson	<ul style="list-style-type: none">● Current Region III Issues<ul style="list-style-type: none">○ Medical certifications for operators○ Waivers for initial license applicants○ Facility representative responsibilities○ Reactivity Changes & Simulator Cert
1 Mike Bielby	<ul style="list-style-type: none">● Administrative and System Walkthrough JPMs<ul style="list-style-type: none">○ Outline Development○ Safety Significance○ Critical Steps○ Alternate Path JPMs
2 Nick Valos	<ul style="list-style-type: none">● Written Examination<ul style="list-style-type: none">○ Outline Development (Random / Systematic)○ Question Development○ SRO Only questions○ Implausible distractors
3 Bruce Palagi	<ul style="list-style-type: none">● Simulator Scenario Testing<ul style="list-style-type: none">○ Outline Development○ Critical Steps / Tasks○ Observable Actions○ Time Duration○ Use of Surrogates
4 Dell McNeil	<ul style="list-style-type: none">● Requalification Examinations<ul style="list-style-type: none">○ 10 CFR 55 issues○ Direct Look-up questions○ Overlap between exams○ Examination Security○ Uniform Conditions (question quality, grading criteria, discriminating exam material)

Requal - activation of new licenses Uniform Conditions (of License Operator Requalification Training)

The primary purpose of the meeting was to discuss the NRC concern of Uniform Conditions for Requalification training and examination at the facilities. An informal list of eleven concerns were given to the task force by the NRC. The list is not an officially published document at this time. The task force was of consensus that their concerns were a collection of minor problems that an agreement could be reached.

However, the collection of these minor problems, according to Dr. Usova and the NRC General Council may lead to a situation where examinations may not discriminate between a safe and an unsafe operator.

The group was not sure what manner the NRC wanted the items addressed. Due to some

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confusion among the task force as to what exactly the NRC wants
one, a conference call was set up with the NRC (Usova,
imble, and Munro).



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The call led to an agreement between the task force and the NRC. The task force will put out a letter drafted by INPO to let each facility know the items of concern. The newest list is now thirteen items and unofficially includes the following:

- 50 - 60% higher cognitive questions as a minimum
 - no direct lookups
 - < 50% duplication between any test
- Jpms should be 50% alternate path. (we pointed out that there are five JPMs and this guideline should be 2 of 5.
- Sequester additional crews that would be seeing the same scenario on the same day.
- No Pass with remediation. This is a change in stance for the NRC. We explained we were just trying to improve the operator's skills but would add this to the list if the NRC insists.

One other item of discussion is the watch standing proficiency issue. The task force is drafting a white paper to address this issue and it will be sent around to the task force members.

NOTE: BRING COPY OF 10CFR

Introduce myself AND assistant.

{assistant} will help facilitate and record the various questions, issues, and feedback that come up during our breakout. After completion of all the breakout sessions, the more significant items will be presented and discussed at Thursday's Facilitator Summary.

Let's get started.

We are not here to provide training in how to write JPMs, rather we want to discuss problems or concerns that arise during preparation.

(slide 1) "Breakout Session 1"

I intend to do a presentation on both Administrative and System JPM development ...**[read slide]**

(slide 2) "Reciprocal Feedback"

Reciprocal Feedback is a two way street: ie, "NRC to licensee, NRC to NRC, licensee to licensee, and vice-versa." During the presentation I invite you to discuss...**[read slide]**

Ask questions at any time during the presentation. I plan to cover OL Feedback questions from the NRC website. We are also handing out 3X5 cards if you prefer to jot down your questions. We will focus on selected areas during the Facilitator Summary at the end of this workshop.

(slide 3) "Examination Outline Quality Checklist, ES-201-2"

Note, I will be referencing the JPM portion of the checklist during the following system and administrative JPM outline discussions:

Read (from ES-201-2):

3.a. Verify that the systems walkthrough outline meets the criteria specified in ES-301-2.

Q. 301.5. How is JPM selection supposed to occur (ie, is it supposed to be a random selection of systems within each of the safety functions)?

A. ES-301D.1 through .4 provide guidelines that include: 1) distributing JPMs among the applicable safety functions and administrative topics; 2) limit repetition of tasks from the previous licensing exam; and 3) to include new and modified tasks on each test. (ES-301 does not specify use of a systematic or random sampling; however, it also does not say that one cannot be used.)

I will cover 3.a, Items (1) through (5) when we discuss ES-301-2, Control Room/In-Plant Systems Outline.

I will cover 3.b, Items (1) through (3) when we discuss ES-301-1, Administrative Topics Outline.

3.c Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.

Q. 301.4. Can there be JPM repetition with similar tasks?

A. Although the same JPMs may not be repeated on subsequent days during the examination week(s), tasks that are similar to those that were tested on previous days

during that examination are permitted provided the actions required to complete the task are significantly different from those required on the previous examination. This is consistent with the policy for repeating tasks from the applicants' audit examination as stated in Section D.1.a of ES-301.

4.a Assess whether plant specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.

-identify dominant action sequences (ie, contribute significantly to frequency of core damage) and determine if they can be used in a JPM.

-use PRA/IPE to identify risk-important operator actions.

4.b Assess whether the 10CFR55.41(RO topics)/.43 (SRO topics) AND 55.45 sampling is appropriate.

Q. 301.2. 1) Do ALL items of 10 CFR 55.45 have to be sampled on the operating exam? 2) What is meant by a "representative sample" of the 13 items identified in 10 CFR 55.45(a)?

A. 1) Section B of ES-301 states that all 13 items in 10 CFR 55.45 do not need to be sampled on every operating test. 2) The NRC has not developed a definition of a "representative sample"; however, logic dictates that it should include a reasonably complete, thorough, balanced, and varied cross-section of the items in the population to be sampled. All of the items should be sampled from time to time, and, absent a basis for emphasizing certain items, it is expected that every item would be sampled at about the same frequency. An examination constructed in accordance with NUREG-1021 will normally contain a "representative sample" of the required items.

4.c Ensure KA importance ratings (except for plant specific priorities) are at least 2.5.

4.d Check for duplication and overlap among exam sections.

-the JPMs and simulator tests should not be redundant, and written exam material should not be duplicated.

-the JPMs and scenarios should be developed and reviewed as a package to prevent the same tasks/events from appearing on both parts of the test.

4.e Check the entire exam for balance of coverage.

4.f Assess whether the exam fits the appropriate job level (RO or SRO).

-write appropriate level admin JPMs for SRO

Q. 301.1. Comment: One of the recognized factors for test item validity is discrimination of job position; however, the walk-through examination has a significant portion done in the plant, outside the control room. These tasks are NLO level, thus, fail to discriminate for the job positions of RO or SRO.

A. 1) 10 CFR 55.45(b)(1) requires the operating test to be administered in a plant walk-through and a simulation facility. Therefore, it would not be possible to eliminate the in-plant portion without first amending the regulation.

2) ROs and SROs need to be familiar with in-plant operations that they oversee and could conceivably be called upon to perform during emergency situations.

3) Per ES-301 of NUREG-1021, tasks selected for the walk-through should have meaningful performance requirements and their K/A importance factors, which were derived by a panel of subject matter experts from the industry and NRC, should be at least 2.5.

(slide 4) "Administrative Topics Outline, ES-301-1"

Read (from ES-201-2):

3.b. Verify that the administrative outline meets the criteria specified on Form ES-301-1:

3.b(1) the tasks are distributed among the topics as specified on the form.

3.b(2) at least one task is new or significantly modified.

3.b(3) no more than one task is repeated from the last two NRC licensing exams.

Recall, there is a list of suggested topics in the Examiner's Standard, ES-301.

Q. 301.14. Would it be appropriate to do an administrative JPM during the systems or dynamic portion of the operating test?

A. Yes??? Section D.3 of ES-301 encourages examiners to integrate the evaluation of the administrative topics into the systems and simulator evaluations because it improves the flow of the operating test. For example, as noted in Section D.3.d of ES-301, the "Emergency Plan" can be evaluated by integrating it into a simulator transient that requires implementation of the emergency plan. Similarly, an alternate path job performance measure in which a component fails could set the stage for an equipment clearance job performance measure for "Equipment Control."

As noted in Section D.3, the applicants' proficiency in the administrative topics should be deliberately evaluated and not inferred from observations made during the simulator operating test.

Moreover, in accordance with Section D.3.n of ES-302, examiners will limit their discussions with the applicants while the scenarios are running so as not to create a distraction.

Q. 301.17. Why are GET-type radiation area, contaminated area, radiological work permit (RWP) JPMs involved in a license exam?

A. 1) The regulations currently require the operating test to cover a representative sample of the items listed in 10 CFR 55.41/43 (depending on the license level) and 55.45, respectively, to the extent that they are applicable to the facility.

2) With regard to testing GET-type topics, exam developers should strive to write JPMs that test the applicants at a licensed level, such as their response to a problem that would be part of their licensed duties. Revision 9 of [NUREG-1021](#) has restructured the walk-through operating test to de-emphasize the administrative topics, particularly for RO applicants.

(slide 5) "Control Room/In-Plant Systems Outline, ES-301-2"

Read (from ES-201-2):

3.a. Verify that the systems walkthrough outline meets the criteria specified on Form ES-301-2:

3.a(1) the outline contains the required number of control room and in-plant tasks distributed among the safety functions as specified on the form.

3.a(2) task repetition from the last two NRC exams is within the limits specified on the form.

3.a(3) no tasks are duplicated from the applicants' audit test(s).

-the facility shall identify simulator events and JPMs that were similar to those that were tested on the audit exam (ES-301D.1.a)

-similar JPMs can be used if the actions required to mitigate the transient, or complete the task are significantly different (ie, alternate path...).

Q. 301.3. Do the audit and NRC JPM exams have to be 100% different (ref. "ES-301, D.1.a - No reuse of audit material for subsequent exams")?

A. No. As noted in Section D.1.a of ES-301 ([NUREG-1021](#)), JPMs that are similar to those that were used on the audit test (or audit tests in the case of retake applicants) are permitted provided the actions required to complete the task (e.g., using an alternate path as discussed in Appendix C) are significantly different from those required during the audit examination. The facility licensee shall identify for the NRC chief examiner those JPMs that are similar to those that were tested on the audit examination.

Q: What does significantly modified mean?

A: At least one condition or event has been substantively changed in a manner that

alters the course of action of the JPM.

- 3.a(4) the number of new or modified tasks meets or exceeds the minimums specified on the form.

Q. 301.16. Is it NRC policy for every JPM to have adverse safety consequences if the operator makes an error?

A. No. As stated in Section D.1.c of ES-301, the K/As covered during the operating test should have importance factors of at least 2.5. Moreover, as stated in Section D.4.b, the JPMs should, individually and as a group, have meaningful performance criteria that will provide a legitimate basis for evaluating the applicant's understanding of and ability to safely operate the associated systems and the plant. Although Section D.3.b of ES-303 requires examiners to explain the safety consequences (as applicable) of the applicant's errors, this should not be misconstrued as a requirement for every JPM to have adverse safety consequences if the applicant makes an error.

- 3.a(5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.

Q: What defines "low power or shutdown condition" JPM?

A: In NUREG-1449, the NRC staff evaluated shutdown as the "reactor subcritical" and low power as "somewhere in transition between subcritical and 5 percent power."

(slide 6) "JPM Development Goals"

We are looking for operationally significant and discriminating JPMs, that require the applicant to perform observable and verifiable actions.

- we are not looking for JPMs that require the applicant to identify a malfunction, then inform someone; or require the applicant to direct another operator to perform an action or procedure.
- we need to see the applicant address a problem, incorporate a procedure, and perform observable, verifiable actions to accomplish the task or mitigate the consequences.

Q. 301.6. The continuous ratcheting of expectations is bypassing the [systematic approach to training] SAT process. Example - Cannot use a high importance JPM because it is perceived to be too easy, and operators are trained and tested on it. Current subjectivity on what is a discriminatory JPM with the removal of the questions. Why can't the selection of JPM's for the license exam be driven by the SAT process and K/A value? "Low discriminatory value" is a euphemism for "too easy" and as a result, the difficulty of the exam is ratcheting up to an unreasonable level. This is contrary to the NRC stated goals.

A. The NRC does not agree that the difficulty of the walk-through portion of the operating test is being ratcheted up to an unreasonable level. (R9) On a nationwide basis, the RO and SRO operating test passing rates have generally ranged between 94 and 98 percent since the early 1990s. Refer to the examination performance trend graphs posted on the [Licensing Process](#) page. Keep in mind that the NRC licensing examination is not a part of the facility licensee's SAT-based training process. As stated in [10 CFR 55.45\(a\)](#), the content of the operating test will be identified, in part, from the learning objectives derived from a systematic analysis of operator duties performed by the facility licensee. As stated in Section D.4.b of ES-301([NUREG-1021](#)), the JPMs should, individually and as a group, have meaningful performance requirements that will provide a legitimate basis for evaluating the applicant's understanding of and ability to safely operate the associated systems and the plant (as required by 10 CFR 55.45). Previously, when each system evaluation consisted of a JPM plus at least two prescribed follow-up questions, the questions would sometimes compensate for the minimal discriminatory potential of the JPM. Now that the prescribed questions have

been eliminated, examiners have been instructed to place increased emphasis on the discriminatory value of the JPMs. However, that does not mean that high importance JPMs will be excluded from the sample. High-importance JPMs will always be acceptable if they discriminate and provide a legitimate basis for evaluating the applicants' understanding of and ability to safely operate the associated system. A walk-through test that is heavily weighted with simplistic, one- or two-step tasks during which everything works as designed will not provide the NRC with an adequate basis to make a licensing decision.

NOTE: Any test item that, when missed, would raise questions regarding adequate justification for denying the applicant's license should not be included on the operating test (ES-301D.1.d)

Let's look at Examiner Standards, Appendix C, DEVELOPING JPMs:

(slide 7) "Develop JPM Performance Criteria"

-JPMs should, individually and as a group, have meaningful performance requirements that will provide a legitimate basis for evaluating an applicant's knowledge and ability to safely operate the system/plant (ES-301D.4.b).

Performance Standard

-detailed control/indication description/criteria, even if not identified in the procedural step (what the applicant has to do or observe to successfully complete the step)

Comments and/or cues for the examiner

- identify expected (and possibly unexpected) controls / indications
- especially important for inplant JPMs

(slide 8) "Job Performance Worksheet, ES-C-1, pg 1"

Appendix C, Form ES-C-1 provides JPM format with all the required information. No need to re-invent the wheel.

JPM title, number

KA reference

Method of testing

Task Standard

-predetermined JPM quantitative and/or qualitative outcome against which the task performance will be measured.

Initial Conditions

- provide sufficient plant status without coaching the applicant
- all actions preceding the JPM starting point should be completed (ie, signed off on procedure)

Initiating Cue

- provide stimulus for applicant to start the JPM, and specify the desired endpoint for the task (note, alternate path tasks may result in different endpoint than stated in the cue.
- both Initiating Conditions and Cue may be handed to the applicant (need to account for during exam as part of exam security)

Identify References and Tools

- references include procedures to perform the task as well as those that provide guidance, directions or standards
- ensure references are the latest rev!
- tools are not to be staged for the exam! Locations need to be identified during the validation and noted on the JPM.

Validation Time

- estimated average time to complete the task
- measured from time IC is read at a plant location operator would normally be given the order

Time Critical

Q. What determines the “time” portion of a time critical JPM?

A. Time specified in a regulation or facility commitment (10CFR, UFSAR, equipment...)

(slide 9) “Job Performance Worksheet, ES-C-1, pg 2”

Identification of critical steps, Performance steps, Standards, Comment/Cues, and Terminating cue

(slide 10) “Job Performance Worksheet, ES-C-1, pg 3”

Time to complete

JPM results

(slide 11) “JPM Critical Step”

(slide 12) “Alternate Path JPMs”

- reference Appendix C for discussion of Alternate Path JPMs
- generally, alternate path JPMs are better tested in the simulator

Give Ex 1:

Q. System isolation, isolation valve fails to close. What would make this an alternate path? Have applicant place the isolation valve control switch in CLOSE and the valve closes?

A. No. The valve should fail in the OPEN position, and the applicant should be procedurally directed to isolate the system by another means, or shutdown the system.

Q. 301. 10. Use of 4 of 10 faulted JPMs I believe is “negative” training and evaluation. I expect our plant to operate every time. Maybe for 2 of 10, faulted is fine. However, 4 of 10 will train operators to expect the plant controls not to function. Should maybe be PRA based?

A. We acknowledge your concern. The NRC is sensitive to the issue of negative training but is also obligated to ensure that the licensing examinations do not become predictable and effectively discriminate between safe and unsafe applicants. Experience showed that some JPMs may not provide an adequate basis for evaluating the applicants' understanding of the system unless they require the applicant to exercise an alternate success path. Therefore, the number of alternate path JPMs was increased to compensate for the elimination of prescribed questions with every JPM. As discussed in the previous question, system faults provide only one source of alternate path JPMs. It would certainly be appropriate to use risk insights when selecting operator actions to be tested using alternate path JPMs.

(40 minutes)

ADMINISTRATIVE / SYSTEM JPM DEVELOPMENT

- i OUTLINE
- i SAFETY SIGNIFICANCE
- i CRITICAL STEPS
- i ALTERNATE PATH

RECIPROCAL FEEDBACK:

) RECENT ISSUES

) LESSONS LEARNED

) GOOD PRACTICES

Facility:		Date of Examination:		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.			
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.			
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.			
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.			
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.			
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and that scenarios will not be repeated on subsequent days.			
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.			
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.			
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations			
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.			
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.			
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.			
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.			
	d. Check for duplication and overlap among exam sections.			
	e. Check the entire exam for balance of coverage.			
	f. Assess whether the exam fits the appropriate job level (RO or SRO).			
a. Author		Printed Name/Signature		Date
b. Facility Reviewer (*)				
c. NRC Chief Examiner (#)				
d. NRC Supervisor				
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.				

ES-301**Administrative Topics Outline****Form ES-301-1**

Facility: _____ Examination Level: RO SRO		Date of Examination: _____ Operating Test Number: _____
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations		
Conduct of Operations		
Equipment Control		
Radiation Control		
Emergency Plan		
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (# 3 for ROs; # 4 for SROs & RO retakes) (N)ew or (M)odified from bank (\$ 1) (P)revious 2 exams (# 1; randomly selected)		

ES-301

Control Room/**In-Plant** Systems Outline

Form ES-301-2

Facility: _____		Date of Examination: _____
Exam Level: RO SRO-I SRO-U		Operating Test No.: _____
Control Room Systems® (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
In-Plant Systems® (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i.		
j.		
k.		
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator	4-6 / 4-6 / 2-3 # 9 / # 8 / # 4 \$ 1 / \$ 1 / \$ 1 \$ 1 / \$ 1 / \$ 1 \$ 2 / \$ 2 / \$ 1 # 3 / # 3 / # 2 (randomly selected) \$ 1 / \$ 1 / \$ 1	

JPM DEVELOPMENT GOALS:

- , *OPERATIONALLY
SIGNIFICANT*
- i *DISCRIMINATING*
- *MULTIPLE,
OBSERVABLE,
VERIFIABLE ACTIONS*
- *MEANINGFUL
PERFORMANCE
REQUIREMENTS*

DEVELOP JPM PERFORMANCE CRITERIA:

- MEANINGFUL PERFORMANCE REQUIREMENTS

- , basis for evaluation of ability to safely operate system/plant

- *TASK STANDARD*

- , provides required outcome to measure against the *task performance*

- IDENTIFY *PERFORMANCE STANDARDS* FOR EACH STEP

- IDENTIFY EXPECTED CONTROL / INDICATIONS

- , important for in-plant

Appendix C
Worksheet

Job Performance Measure
Form ES-C-1

Facility: _____

Task No: _____

Task Title: _____

Job Performance Measure No: _____

K/A Reference: _____

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom _____

Simulator _____

Plant _____

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Task Standard:

Required Materials:

General References:

Initiating Cue:

Time Critical Task: Yes/No

Validation Time:

Performance Information***Denote critical steps with a check mark***

☐ Performance step:

Standard:

Comment:

☐ Performance step:

Standard:

Comment:

☐ Performance step:

Standard:

Comment:

Terminating cue:

Appendix C**3****Form ES-C-1****Verification of Completion**

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

_____Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

JPM CRITICAL STEP

Procedural Step that is required to accomplish the *task* and that must be performed:

- T correctly;
- T accurately;
- T proper sequence;
- T at the proper time.

Critical Steps shall:

- T be identified;
- T have an associated *performance standard*.

ALTERNATE PATH JPMs

- Success Path:
 - need a valid alternative method of achieving success.
- Procedurally Driven:
 - need a procedure to address required actions
 - can be addressed by administrative procedures or policies
- Logical Sequence:
 - if a malfunction occurs when performing a normal evolution, would not be expected to enter EOPs;
 - would expect applicant to correct the problem by referring to an ARP or ABN
 - not contain a cascading sequence of events that would require simultaneous use of several procedures
- Independent of Crew Dynamics:
 - able to complete the task or mitigate the problem without reliance on other operator actions
- Validated in Advance:
 - JPM should not be changed after it begins