

Operating Test Requirements

2010 Exam Writers Workshop

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Meeting the Standard

- **120 Days – 120 day letter**
- **90 Days – References to the NRC if we are writing the exam.**
- **75 Days – Outline Submittal**

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- **What we need with the Outline Submittal**
- **Examination Outline Quality Checklist 201-2**
(The written exam blocks can be N/A'd)

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- **Examination Security Agreement 201-3**
- **Administrative JPM Outline 301-1**
- **Control Room/In-Plant Systems Outline 301-2**

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- **Operating Test Quality Checklist
ES-301-3**
- **Simulator Scenario Quality Checklist
ES-301-4**
- **Transient and Event Checklist
ES-301-5**

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- **Competencies Checklist ES 301-6**

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- **Administrative JPM Outline 301-1
(Administrative Topics)**

“Conduct of Operations,”

evaluates the applicant’s knowledge of the daily operation of the facility.

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- shift turnover
- shift staffing requirements
- temporary modifications of procedures
- reactor plant startup requirements
- mode changes
- plant parameter verification [estimated critical position (ECP), heat balance, etc.]

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- short-term information (e.g., night and standing orders)
- key control
- security (awareness and familiarity)
- fuel handling

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“Equipment Control,”

addresses the administrative requirements associated with managing and controlling plant systems and equipment.

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- surveillance testing
- maintenance
- tagging and clearances
- temporary modification of systems
- familiarity with and use of piping and instrument drawings

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“Radiation Control,”

- evaluates the applicant’s knowledge and abilities with respect to radiation hazards and protection (of plant personnel and the public).

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- use and function of portable radiation and contamination survey instruments and personnel monitoring equipment
- knowledge of significant radiation hazards

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- the ability to perform procedures to reduce excessive levels of radiation and to guard against personnel exposure
- radiation exposure limits and contamination control, including permissible levels in excess of those authorized

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- radiation work permits
- control of radiation releases

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- “Emergency Plan,”

evaluates the applicant’s knowledge of the facility’s emergency plan, including, as appropriate, the responsibility of the RO or SRO to decide whether the plan should be executed and duties assigned under the plan

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- lines of authority during an emergency
- emergency action levels and classifications
- emergency facilities
- emergency communications
- emergency protective action recommendations

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- SRO's - must have 5 administrative JPMs, all topics must be sampled.
- RO must have 4 administrative JPMs.
(Conduct of Operations must be sampled)

Topic	Number of Subjects	
	RO	SRO and RO Retakes
“Conduct of Operations”	1 (or 2)	2
“Equipment Control”	1 (or 0)	1
“Radiation Control”	1 (or 0)	1
“Emergency Plan”	1 (or 0)	1
Total	4	5

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- **Control Room/In-Plant Systems
Outline 301-2**

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- Each of the control room systems and evolutions (and separately each of the in-plant systems and evolutions) selected for RO and SRO-I applicants should evaluate a different safety function, and the same system or evolution should not be used to evaluate more than one safety function in each location.

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License Level	Control Room	In-Plant	Total
RO	8	3	11
SRO-instant (I)	7	3	10
SRO-upgrade (U)	2 or 3	3 or 2	5

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- Upgrades:

The five systems and evolutions selected for an SRO-U applicant should evaluate at least five different safety functions. One of the control room systems or evolutions must be an engineered safety feature, and the same system or evolution should not be used to evaluate more than one safety function.

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- At least one of the tasks shall be related to a shutdown or low-power condition, and four to six of the tasks for ROs and instant SROs and two to three of the tasks for upgrade SROs shall require the applicant to execute alternative paths within the facility's operating procedures.

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- In addition, at least one of the tasks conducted in the plant shall evaluate the applicant's ability to implement actions required during an emergency or abnormal condition, and another shall require the applicant to enter the RCA.

Facility: _____

Date of Examination: _____

Exam Level (circle one): RO / SRO-I / SRO-U

Operating Test No.: _____

Control Room Systems[@] (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

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 control room (and in-plant) systems must be different and 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	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

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- Simulator Operating Test:

The simulator operating tests (i.e., scenario sets) will be constructed by selecting and modifying scenarios from existing facility licensee or NRC scenario banks and by developing new scenarios.

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- The initial conditions, normal operations, malfunctions, and major transients should be varied among the scenarios and should include startup, low-power², and full-power situations

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- Review the associated walk-through outline if it has already been prepared (refer to Section D.4), and take care not to duplicate operations that will be tested during the systems walk-through portion of the operating test.

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What is Required:

Every RO applicant should have a total of six Instrument/component malfunctions, Normal, or reactivity manipulation.

These should be split between the RO and BOP positions.

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This can be a combination of:

- Instrument/Component Failures (4)
- Reactivity Manipulation (1)
- Normal Evolutions (1)

These events should all be prior to the
Major Malfunction

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Only one applicant can get credit for a reactivity manipulation or a normal per scenario.

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SRO Instants must have two Technical Specification calls as the SRO, and must stand the RO position.

The SRO-I applicant must have two instrument/component malfunctions in the RO position, as well as a Major Transient.

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SRO Upgrades must have two Technical Specification calls, the same instrument/component malfunctions, and a Major Transient.

(Only required to be observed in one scenario)

Questions?

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