

ES-301 Transient and Event Checklist Form ES-301-5

Facility: PINGP, Units 1 and 2 Date of Exam: May 14-25, 2012 Operating Test Number: 2012301

| A P P L I C A N T | E V E N T T Y P E | Scenarios (For Crew 1 – SRO-U ₁ , RO ₁ , RO ₂) | | | | | | | | | | | | T O T A L | M I N I M U M(*) | | |
|---|---|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|-----------------------|------------------------------------|---|---|
| | | 1 | | | 2 | | | 3 | | | 4 | | | | | | |
| | | CREW P O S I T I O N | | | CREW P O S I T I O N | | | CREW P O S I T I O N | | | CREW P O S I T I O N | | | | | | |
| | | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | | R | I | U |
| RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/> | RX | | | | | | | | | | | | 0 | 1 | 1 | 0 | |
| | NOR | 2 | | | 2 | | | | | | | | 2 | 1 | 1 | 1 | |
| | I/C | 3,4,5, 7 | | | 3,4,6, 7,8 | | | | | | | | 9 | 4 | 4 | 2 | |
| | MAJ | 6 | | | 5 | | | | | | | | 2 | 2 | 2 | 1 | |
| | TS | 2,5 | | | 3,4 | | | | | | | | 4 | 0 | 2 | 2 | |
| RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/> | RX | | 1 | | | | | | | | | | 1 | 1 | 1 | 0 | |
| | NOR | | | | | 2 | | | | | | | 1 | 1 | 1 | 1 | |
| | I/C | | 3,4,5 | | | 5,6,8 | | | | | | | 6 | 4 | 4 | 2 | |
| | MAJ | | 6 | | | 7 | | | | | | | 2 | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | 0 | 0 | 2 | 2 | |
| RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/> | RX | | | | 2 | | | | | | | | 1 | 1 | 1 | 0 | |
| | NOR | | | 1 | | | | | | | | | 1 | 1 | 1 | 1 | |
| | I/C | | | 5,7 | | 1,4 | | | | | | | 4 | 4 | 4 | 2 | |
| | MAJ | | | 6 | | 7 | | | | | | | 2 | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | 0 | 0 | 2 | 2 | |
| RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/> | RX | | | | | | | | | | | | | 1 | 1 | 0 | |
| | NOR | | | | | | | | | | | | | 1 | 1 | 1 | |
| | I/C | | | | | | | | | | | | | 4 | 4 | 2 | |
| | MAJ | | | | | | | | | | | | | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | 0 | 2 | 2 | |

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position.
2. Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

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| A P P L I C A N T | E V E N T T Y P E | Scenarios (For Crew 2 – SRO-U ₂ , RO ₃ , RO ₄) | | | | | | | | | | | | T O T A L | M I N I M U M (*) | | |
|---|---|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|-----------------------|--|---|---|
| | | 1 | | | 2 | | | | | | | | | | | | |
| | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | | | | |
| | | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | | | | |
| | | | | | | | | | | | | | R | I | U | | |
| RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/> | RX | | | | | | | | | | | | | 0 | 1 | 1 | 0 |
| | NOR | 2 | | | 2 | | | | | | | | | 2 | 1 | 1 | 1 |
| | I/C | 3,4,5, 7 | | | 3,4,6, 7,8 | | | | | | | | | 9 | 4 | 4 | 2 |
| | MAJ | 6 | | | 5 | | | | | | | | | 2 | 2 | 2 | 1 |
| | TS | 2,5 | | | 3,4 | | | | | | | | | 4 | 0 | 2 | 2 |
| RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/> | RX | | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 |
| | NOR | | | | | | 2 | | | | | | | 1 | 1 | 1 | 1 |
| | I/C | | 3,4,5 | | | | 6,7,8 | | | | | | | 6 | 4 | 4 | 2 |
| | MAJ | | 6 | | | | 5 | | | | | | | 2 | 2 | 2 | 1 |
| | TS | | | | | | | | | | | | | 0 | 0 | 2 | 2 |
| RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/> | RX | | | | | 1 | | | | | | | | 1 | 1 | 1 | 0 |
| | NOR | | | 1 | | | | | | | | | | 1 | 1 | 1 | 1 |
| | I/C | | | 5,7 | | 3,4 | | | | | | | | 4 | 4 | 4 | 2 |
| | MAJ | | | 6 | | 5 | | | | | | | | 2 | 2 | 2 | 1 |
| | TS | | | | | | | | | | | | | 0 | 0 | 2 | 2 |
| RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/> | RX | | | | | | | | | | | | | | 1 | 1 | 0 |
| | NOR | | | | | | | | | | | | | | 1 | 1 | 1 |
| | I/C | | | | | | | | | | | | | | 4 | 4 | 2 |
| | MAJ | | | | | | | | | | | | | | 2 | 2 | 1 |
| | TS | | | | | | | | | | | | | | 0 | 2 | 2 |

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- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

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| A P P L I C A N T | E V E N T T Y P E | Scenarios (For Crew 3 – SRO-I ₁ , SRO-I ₂ , RO ₅) | | | | | | | | | | | | | T O T A L | M I N I M U M (*) | | |
|--|---|---|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|----|-----------------------|--|---|---|
| | | 1 | | | 2 | | | 3 | | | | | | | | | | |
| | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | | | | | |
| | | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | | | | | |
| | | | | | | | | | | | | | R | I | U | | | |
| RO <input type="checkbox"/> | RX | | | | | | | | 2 | | | | | | | | 1 | 1 |
| SRO-I <input type="checkbox"/> | NOR | 2 | | | | | 1,2 | | | | | | | 2 | 1 | 1 | 1 | |
| SRO-U <input checked="" type="checkbox"/> | I/C | 3,4,5,7 | | | | | 6,7,8 | | 1,4,6 | | | | | 10 | 4 | 4 | 2 | |
| SRO-U <input type="checkbox"/> | MAJ | 6 | | | | | 5 | | 7 | | | | | 3 | 2 | 2 | 1 | |
| | TS | 3,5 | | | | | | | | | | | | 2 | 0 | 2 | 2 | |
| RO <input type="checkbox"/> | RX | | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | 2 | | | | 2,3 | | | | | 3 | 1 | 1 | 1 | |
| SRO-U <input checked="" type="checkbox"/> | I/C | | 3,4,5 | | 3,4,6,7,8 | | | | 1,4,5,6,8 | | | | | 13 | 4 | 4 | 2 | |
| SRO-U <input type="checkbox"/> | MAJ | | 6 | | 5 | | | | 7 | | | | | 3 | 2 | 2 | 1 | |
| | TS | | | | 3,4 | | | | 1,4 | | | | | 4 | 0 | 2 | 2 | |
| RO <input checked="" type="checkbox"/> | RX | | | | | 1 | | | | | | | | 1 | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | 1,2 | | | | | | 2,3 | | | | 4 | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | 5,7 | | 3,4 | | | | 5,6,8 | | | | 7 | 4 | 4 | 2 | |
| SRO-U <input type="checkbox"/> | MAJ | | | 6 | | 5 | | | | 7 | | | | 3 | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | 0 | 0 | 2 | 2 | |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | | | | | | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | | | | | | | | | | | 4 | 4 | 2 | |
| SRO-U <input type="checkbox"/> | MAJ | | | | | | | | | | | | | | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | | 0 | 2 | 2 | |

Instructions:

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- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

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Facility: PINGP, Units 1 and 2 Date of Exam: May 14-25, 2012 Operating Test Number: 2012301

| A P P L I C A N T | E V E N T T Y P E | Scenarios (For Crew 4 – SRO-I ₃ , RO ₆ , SUR) | | | | | | | | | | | | | T O T A L | M I N I M U M (*) | | |
|--|---|---|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|---|-----------------------|--|---|--|
| | | 1 | | | 2 | | | 3 | | | 4 | | | | | | | |
| | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | | | | | |
| | | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | | | | | |
| | | | | | | | | | | | | | R | I | U | | | |
| RO <input type="checkbox"/> | RX | | | | | 1 | | | | | | | | 1 | 1 | 1 | 0 | |
| SRO-I <input checked="" type="checkbox"/> | NOR | 2 | | | | | | | | | | | | 1 | 1 | 1 | 1 | |
| SRO-U <input checked="" type="checkbox"/> | I/C | 3,4,5, 7 | | | | 3,4 | | | | | | | | 6 | 4 | 4 | 2 | |
| RO <input type="checkbox"/> | MAJ | 6 | | | | 5 | | | | | | | | 2 | 2 | 2 | 1 | |
| | TS | 3,5 | | | | | | | | | | | | 2 | 0 | 2 | 2 | |
| RO <input checked="" type="checkbox"/> | RX | | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | |
| SRO-I <input checked="" type="checkbox"/> | NOR | | | | | | 1,2 | | | | | | | 2 | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | 3,4,5 | | | | 6,7,8 | | | | | | | 6 | 4 | 4 | 2 | |
| RO <input type="checkbox"/> | MAJ | | 6 | | | | 5 | | | | | | | 2 | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | 0 | 0 | 2 | 2 | |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | | | | | | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | | | | | | | | | | | 4 | 4 | 2 | |
| RO <input type="checkbox"/> | MAJ | | | | | | | | | | | | | | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | | 0 | 2 | 2 | |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | | | | | | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | | | | | | | | | | | 4 | 4 | 2 | |
| RO <input type="checkbox"/> | MAJ | | | | | | | | | | | | | | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | | 0 | 2 | 2 | |

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
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Facility: PINGP, Units 1 and 2 Date of Exam: May 14-25, 2012 Operating Test Number: 2012301

| A P P L I C A N T | E V E N T T Y P E | Scenarios (For Crew 5 – SRO-I ₄ , RO ₇ , SUR) | | | | | | | | | | | | | T O T A L | M I N I M U M (*) | | |
|--|---|---|-------------|-------------|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|---|-----------------------|--|---|--|
| | | 2 | | | 2 | | | 3 | | | 4 | | | | | | | |
| | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | C R E W P O S I T I O N | | | | | | | |
| | | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | | | | | |
| | | | | | | | | | | | | | R | I | U | | | |
| RO <input type="checkbox"/> | RX | | | | | | | | 2 | | | | | 1 | 1 | 1 | 0 | |
| SRO-I <input checked="" type="checkbox"/> | NOR | | | | 2 | | | | | | | | | 1 | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | 3,4,6, 7,8 | | | | 1,4 | | | | | 7 | 4 | 4 | 2 | |
| | MAJ | | | | 5 | | | | 7 | | | | | 2 | 2 | 2 | 1 | |
| | TS | | | | 3,4 | | | | | | | | | 2 | 0 | 2 | 2 | |
| RO <input checked="" type="checkbox"/> | RX | | | | | 1 | | | | | | | | 1 | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | 2,3 | | | | 2 | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | 3,4 | | | | | 5,6,8 | | | | 5 | 4 | 4 | 2 | |
| | MAJ | | | | 5 | | | | | 7 | | | | 2 | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | 0 | 0 | 2 | 2 | |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | | | | | | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | | | | | | | | | | | 4 | 4 | 2 | |
| | MAJ | | | | | | | | | | | | | | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | | 0 | 2 | 2 | |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | 1 | 1 | 0 | |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | | | | | | 1 | 1 | 1 | |
| SRO-U <input type="checkbox"/> | I/C | | | | | | | | | | | | | | 4 | 4 | 2 | |
| | MAJ | | | | | | | | | | | | | | 2 | 2 | 1 | |
| | TS | | | | | | | | | | | | | | 0 | 2 | 2 | |

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| A P P L I C A N T | E V E N T T Y P E | Scenarios (For Any Crew – Spare) | | | | | | | | | | | | | T O T A L | M I N I M U M (*) | | |
|--|---|----------------------------------|-------------|-------------|---------------|-------------|-------------|---------------|-------------|-------------|---------------|-------------|-------------|---|-----------------------|--|---|---|
| | | Spare | | | | | | | | | | | | | | | | |
| | | CREW POSITION | | | CREW POSITION | | | CREW POSITION | | | CREW POSITION | | | | | | | |
| | | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | S R O | A T C | B O P | R | | I | U | |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | 0 | 1 | 1 | 0 |
| SRO-I <input type="checkbox"/> | NOR | 2 | | | | | | | | | | | | | 1 | 1 | 1 | 1 |
| SRO-U <input checked="" type="checkbox"/> | I/C | 1,4,5 | | | | | | | | | | | | | 3 | 4 | 4 | 2 |
| SRO-U <input checked="" type="checkbox"/> | MAJ | 3 | | | | | | | | | | | | | 1 | 2 | 2 | 1 |
| | TS | 1 | | | | | | | | | | | | | 1 | 0 | 2 | 2 |
| RO <input checked="" type="checkbox"/> | RX | | 2 | | | | | | | | | | | | 1 | 1 | 1 | 0 |
| SRO-I <input checked="" type="checkbox"/> | NOR | | | | | | | | | | | | | | 0 | 1 | 1 | 1 |
| SRO-U <input checked="" type="checkbox"/> | I/C | | 1 | | | | | | | | | | | | 1 | 4 | 4 | 2 |
| | MAJ | | 3 | | | | | | | | | | | | 1 | 2 | 2 | 1 |
| | TS | | | | | | | | | | | | | | 0 | 0 | 2 | 2 |
| RO <input checked="" type="checkbox"/> | RX | | | | | | | | | | | | | | 0 | 1 | 1 | 0 |
| SRO-I <input type="checkbox"/> | NOR | | | 2 | | | | | | | | | | | 1 | 1 | 1 | 1 |
| SRO-U <input type="checkbox"/> | I/C | | | 4,5 | | | | | | | | | | | 2 | 4 | 4 | 2 |
| | MAJ | | | 3 | | | | | | | | | | | 1 | 2 | 2 | 1 |
| | TS | | | | | | | | | | | | | | 0 | 0 | 2 | 2 |
| RO <input type="checkbox"/> | RX | | | | | | | | | | | | | | | 1 | 1 | 0 |
| SRO-I <input type="checkbox"/> | NOR | | | | | | | | | | | | | | | 1 | 1 | 1 |
| SRO-U <input type="checkbox"/> | I/C | | | | | | | | | | | | | | | 4 | 4 | 2 |
| | MAJ | | | | | | | | | | | | | | | 2 | 2 | 1 |
| | TS | | | | | | | | | | | | | | | 0 | 2 | 2 |

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