

Job Title: _____

Date: _____

Survey Number Master

**IRI POWER PLANT OPERATIONS
CERTIFICATION
VALIDATION SURVEY**

For
IRI Power Plant

By
Industrial Resources, Inc.
A Training Services Company

01/03/05

Introduction

As part of the continuing effort by Industrial Resources, Inc. to improve the Power Plant Operations Training Program, a validation study is being performed to validate the training requirements of Power Plant Operations Personnel. The validation study is designed to identify the knowledge's, skills, and/or abilities that are needed by Power Plant I, Power Plant Operator II, and Power Plant Operator III to perform their jobs at the IRI Power Plant.

Industrial Resources, Inc. has been contracted to perform this validation study to ensure that the training and evaluation methods used in the training program are job content valid in relationship to IRI Power Plant Operator I, Operator II, and Operator III job requirements. What that means is – we want to make sure that the items listed in the attached survey are all knowledge, skills or abilities that a Power Plant Operator I, Operator II, and Operator III would be expected to have at IRI Power Plant.

You are being asked to read and study the survey questionnaire that follows, and rate each of the items according to the instructions that are provided. The questionnaire is divided into five sections designed to represent IRI Power Plant Training Modules Lists for Power Plant Operations: Part 1 Power Plant Operator I, Part 2 Power Plant Operator II (Site Specific Training Modules), Part 3 Power Plant Operator III (Heat Rate Improvement).

We want to thank you for volunteering to assist us with this project. Your input is crucial to the successful completion of this validation study and will assist those who follow you to become skilled and competent The IRI Power Plant Operator I, Operator II, and Operator III.

Rater's Information

Please complete the following personal information so that we will have some understanding of your expertise and the depth of your knowledge and experience. This information is only used to substantiate your ratings of the tasks in the validation survey. All of your responses and ratings on this survey are strictly confidential.

Please indicate your current status:

- Power Plant Operator I
- Power Plant Operator II
- Power Plant Operator III

Please indicate the number of years you have worked as IRI Power Plant Operator I, Operator II, and/or Operator III (this includes apprenticeship/trainee and or service work):

- 1 to 5 years
- 6 to 10 years
- 11 to 15 years
- Over 15 years

Please indicate previous relevant experience (Supervisor or Management only):

- Control Room Operator
- Plant Operator but not a Control Room Operator

IRI Power Plant Operations Certification Survey Questionnaire

Instructions

This questionnaire lists items that are part of the normal job requirements for IRI Power Plant Operator I, Operator II, and/or Operator III. In order to determine the validity of these items it is important that you rate each one as to its Frequency, Importance, and Difficulty. If you do not personally perform the item listed, or it applies to something that you do not work on, rate it based on your general knowledge of IRI Power Plant Operator I, Operator II, and Operator III jobs.

Please take your time and if you have questions about an item do not hesitate to ask. The rating scales are described below.

Frequency (Freq.)

Frequency refers to how often the knowledge or ability is needed or used. This frequency is based on a normal work schedule (i.e. no overtime).

- 0 – not needed or used
- 1 – seldom needed or used
- 2 – infrequently needed or used
- 3 – normally needed or used
- 4 – often needed or used
- 5 – frequently needed or used

Importance (Imp.)

Importance refers to the impact of having the proper knowledge and/or ability as it relates to proper job performance.

- 0 – unimportant, does not apply
- 1 – very little importance
- 2 – slight importance
- 3 – moderate importance
- 4 – very important
- 5 – extremely important

Difficulty (Diff.)

Difficulty refers to the extent of task complexity or difficulty in correct performance; the level of training and/or experience needed to perform the item; the amount of time or effort required for acquiring the ability or knowledge.

- 0 – no experience and/or training required
- 1 – very simple, requires little or no experience and/or training
- 2 – fairly simple, requires minor training and/or experience
- 3 – moderately simple, requires some training and/or experience
- 4 – fairly complex, requires training and/or experience
- 5 – very complex, requires extensive training and/or experience

**IRI Power Plant Operations Certification
Power Plant Operator I Section
Survey Questionnaire**

**Part 1
Power Plant Operator I Section**

IRI Power Plant Operations Certification
IRI Power Plant Operator I Section
Survey Questionnaire

			Freq.	Imp.	Diff.	
1.	Part 1-1.	AOPBP-1-1	Identify fundamental units of measurement for length, time, and mass	[]	[]	[]
2.	Part 1-2.	AOPBP-1-2	Identify fundamental units of measurement for the process variables pressure, temperature, flow, and level	[]	[]	[]
3.	Part 1-3.	AOPBP-1-3	Explain the relationship between force and motion	[]	[]	[]
4.	Part 1-4.	AOPBP-1-4	State the three laws of force and motion	[]	[]	[]
5.	Part 1-5.	AOPBP-1-5	Define inertia	[]	[]	[]
6.	Part 1-6.	AOPBP-1-6	Define acceleration	[]	[]	[]
7.	Part 1-7.	AOPBE-2-1	Define the following terms: electrical potential, current, and voltage	[]	[]	[]
8.	Part 1-8.	AOPBE-2-2	Describe three sources of electrical potential: chemical action, heat, and light	[]	[]	[]
9.	Part 1-9.	AOPBE-2-3	List the three elements necessary to create an electrical potential using magnetic effects	[]	[]	[]
10.	Part 1-10.	AOPBE-2-4	Recognize and describe a sine wave	[]	[]	[]
11.	Part 1-11.	AOPBE-2-5	Explain the basic differences between single-phase power and three-phase power	[]	[]	[]
12.	Part 1-12.	AOPBE-2-6	Describe basic motor action	[]	[]	[]
13.	Part 1-13.	AOPBE-2-7	Describe the principle of operation of a DC motor	[]	[]	[]
14.	Part 1-14.	AOPBE-2-8	Describe the principle of operation of an AC motor	[]	[]	[]
15.	Part 1-15.	AOPHE-3-1	Describe some of the effects of heat	[]	[]	[]
16.	Part 1-16.	AOPHE-3-2	Describe the Law of Energy Conservation	[]	[]	[]
17.	Part 1-17.	AOPHE-3-3	Define sensible heat and latent heat	[]	[]	[]
18.	Part 1-18.	AOPHE-3-4	Describe in general terms how a once-through boiler operates	[]	[]	[]
19.	Part 1-19.	AOPHE-3-5	Describe the effects of pressure on the temperature at which a substance undergoes a phase change	[]	[]	[]
20.	Part 1-20.	AOPHT-4-1	Describe the effects of temperature difference on heat transfer	[]	[]	[]
21.	Part 1-21.	AOPHT-4-2	Define specific heat and give examples	[]	[]	[]
22.	Part 1-22.	AOPHT-4-3	Recognize the formula for heat transfer	[]	[]	[]
23.	Part 1-23.	AOPHT-4-4	List and describe the three modes of heat transfer	[]	[]	[]
24.	Part 1-24.	AOPHT-4-5	Describe conduction heat transfer	[]	[]	[]
25.	Part 1-25.	AOPHT-4-6	Describe natural convection and forced convection	[]	[]	[]
26.	Part 1-26.	AOPHT-4-7	Describe how heat transfer takes place between two fluids separated by a solid boundary	[]	[]	[]
27.	Part 1-27.	AOPHT-4-8	Describe what affects heat transfer between two fluids.	[]	[]	[]
28.	Part 1-28.	AOPHT-4-9	Describe radiation heat transfer	[]	[]	[]
29.	Part 1-29.	AOPHT-4-10	Describe the general operation of a shell and tube heat exchanger	[]	[]	[]
30.	Part 1-30.	AOPHT-4-11	Describe the operation of a lube oil cooler	[]	[]	[]
31.	Part 1-31.	AOPHT-4-12	Describe problems that can occur in heat exchangers and explain how these problems can be minimized	[]	[]	[]
32.	Part 1-32.	AOPHT-4-13	Describe the insulating effects of rust and scale buildup	[]	[]	[]
33.	Part 1-33.	AOPFS-5-1	Explain, in general terms, what a plant system is	[]	[]	[]
34.	Part 1-34.	AOPFS-5-2	Explain what a fluid is	[]	[]	[]
35.	Part 1-35.	AOPFS-5-3	Describe the effects of pressure changes on a static fluid	[]	[]	[]
36.	Part 1-36.	AOPFS-5-4	Describe the four basic parts of a liquid system	[]	[]	[]
37.	Part 1-37.	AOPFS-5-5	Describe the effects of energy conversions on a fluid under steady-state conditions	[]	[]	[]
38.	Part 1-38.	AOPFS-5-6	Describe some of the energy conversions that take place in liquid systems	[]	[]	[]
39.	Part 1-39.	AOPFS-5-7	Describe the basic parts of a typical compressed air system	[]	[]	[]
40.	Part 1-40.	AOPFS-5-8	Describe the operation of a jet pump	[]	[]	[]
41.	Part 1-41.	AOPFS-5-9	Describe the operation of a nozzle	[]	[]	[]

IRI Power Plant Operations Certification
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			Freq.	Imp.	Diff.	
42.	Part 1-42.	AOPFS-5-10	Describe the operation of a condenser	[]	[]	[]
43.	Part 1-43.	AOPLM-6-1	Define work and explain its relationship to energy	[]	[]	[]
44.	Part 1-44.	AOPLM-6-2	Define power	[]	[]	[]
45.	Part 1-45.	AOPLM-6-3	Explain why efficiency is important to plant operation	[]	[]	[]
46.	Part 1-46.	AOPLM-6-4	Define mechanical advantage	[]	[]	[]
47.	Part 1-47.	AOPLM-6-5	Explain the mechanical advantage of the inclined plane	[]	[]	[]
48.	Part 1-48.	AOPLM-6-6	Explain the mechanical advantage of the lever	[]	[]	[]
49.	Part 1-49.	AOPLM-6-7	Explain the hydraulic principle and give examples of where it applies	[]	[]	[]
50.	Part 1-50.	AOPLM-6-8	Discuss some of the effects of friction	[]	[]	[]
51.	Part 1-51.	AOPGF-7-1	Describe the effects of temperature and pressure on gases	[]	[]	[]
52.	Part 1-52.	AOPGF-7-2	Explain how Boyle's Law and Charles' Law relate to the pressure and volume of gases	[]	[]	[]
53.	Part 1-53.	AOPGF-7-3	Explain how the General Gas Law relates to temperature, pressure and volume of a gas	[]	[]	[]
54.	Part 1-54.	AOPGF-7-4	Explain how atmospheric pressure can be measured	[]	[]	[]
55.	Part 1-55.	AOPGF-7-5	Describe the effects of pressure on a monometer	[]	[]	[]
56.	Part 1-56.	AOPGF-7-6	Explain how various scales can be used to measure pressure	[]	[]	[]
57.	Part 1-57.	AOPGF-7-7	Define: flow, flow rate, steady-state conditions, static conditions, head, and head pressure	[]	[]	[]
58.	Part 1-58.	AOPGF-7-8	Describe the effects of flow on pressure	[]	[]	[]
59.	Part 1-59.	AOPGF-7-9	Describe the effects of velocity on pressure	[]	[]	[]
60.	Part 1-60.	AOPGF-7-10	Describe the effects of friction on pressure	[]	[]	[]
61.	Part 1-61.	AOPSL-8-1	Identify the three forms of matter and explain how they are structured	[]	[]	[]
62.	Part 1-62.	AOPSL-8-2	Give a general description of the molecular structure and the characteristics of solids, liquids, and gases	[]	[]	[]
63.	Part 1-63.	AOPSL-8-3	Compare and contrast the molecular structures of different solids	[]	[]	[]
64.	Part 1-64.	AOPSL-8-4	Explain why liquids can flow	[]	[]	[]
65.	Part 1-65.	AOPSL-8-5	Define mass, density, and stress	[]	[]	[]
66.	Part 1-66.	AOPSL-8-6	Identify five types of stress and their effects on solids	[]	[]	[]
67.	Part 1-67.	AOPSL-8-7	Define elasticity and temperature	[]	[]	[]
68.	Part 1-68.	AOPSL-8-8	Describe the effects of temperature on solids	[]	[]	[]
69.	Part 1-69.	AOPSL-8-9	Describe how liquids seek their own level	[]	[]	[]
70.	Part 1-70.	AOPSL-8-10	Define viscosity	[]	[]	[]
71.	Part 1-71.	AOPSL-8-11	Describe the property of wetting and explain why it occurs	[]	[]	[]
72.	Part 1-72.	AOPSL-8-12	Describe buoyancy and explain why it occurs	[]	[]	[]
73.	Part 1-73.	AOPSL-8-13	Describe specific gravity and how it relates to density	[]	[]	[]
74.	Part 1-74.	AOPSL-8-14	Describe the effects of temperature and pressure on liquids	[]	[]	[]
75.	Part 1-75.	AOPBC-9-1	List the parts of a basic circuit	[]	[]	[]
76.	Part 1-76.	AOPBC-9-2	Explain how Ohm's Law describes the relationships between current, voltage, and resistance in a circuit	[]	[]	[]
77.	Part 1-77.	AOPBC-9-3	Explain the basic difference between series circuits and parallel circuits with respect to current flow	[]	[]	[]
78.	Part 1-78.	AOPBC-9-4	Describe the basic operation of a transformer	[]	[]	[]
79.	Part 1-79.	AOPBC-9-5	Explain the difference between a step-up transformer and a step-down transformer	[]	[]	[]
80.	Part 1-80.	AOPBC-9-6	State the general function of fuses and circuit breakers	[]	[]	[]
81.	Part 1-81.	AOPBC-9-7	Describe the basic operation of a fuse	[]	[]	[]
82.	Part 1-82.	AOPBC-9-8	Describe the basic operation of a circuit breaker	[]	[]	[]
83.	Part 1-83.	AOPBC-9-9	Describe the basic operation of a solenoid	[]	[]	[]

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			Freq.	Imp.	Diff.	
84.	Part 1-84.	AOPBC-9-10	Explain how voltmeters and ammeters can help personnel spot electrical problems before equipment damage occurs	[]	[]	[]

**IRI Power Plant Operations Certification
IRI Power Plant Operator II (Site Specific Training Modules) Section
Survey Questionnaire**

**Part 2
Power Plant Operators II
Site Specific Training Modules**

IRI Power Plant Operations Certification
IRI Power Plant Operator II (Site Specific Training Modules) Section
Survey Questionnaire

				Freq.	Imp.	Diff.
1.	Part 2-1.	IRI-01-1	State from memory the function of the City Water System	[]	[]	[]
2.	Part 2-2.	IRI-01-2	State from memory the names of each City Water System component	[]	[]	[]
3.	Part 2-3.	IRI-01-3	Describe the relationship associated with each City Water System component as related to the Block Diagram	[]	[]	[]
4.	Part 2-4.	IRI-01-4	Describe from memory, the System flow path associated with the City Water System	[]	[]	[]
5.	Part 2-5.	IRI-01-5	State, from memory, the names and functions of each component within the City Water System	[]	[]	[]
6.	Part 2-6.	IRI-01-6	List each City Water System component's normal operating parameters	[]	[]	[]
7.	Part 2-7.	IRI-01-7	Recount the safety requirements associated with the City Water System	[]	[]	[]
8.	Part 2-8.	IRI-01-8	List Precautions, Limitations and Setpoints relating to operation of the City Water System	[]	[]	[]
9.	Part 2-9.	IRI-01-9	List the Pre-Operational checks needed when operating the City Water System	[]	[]	[]
10.	Part 2-10.	IRI-01-10	Align the City Water System for operation	[]	[]	[]
11.	Part 2-11.	IRI-01-11	Describe the City Water System operation during Startup	[]	[]	[]
12.	Part 2-12.	IRI-01-12	Specify conditions associated with normal operation of the City Water System	[]	[]	[]
13.	Part 2-13.	IRI-01-13	Describe the City Water System operation during Shutdown operations	[]	[]	[]
14.	Part 2-14.	IRI-01-14	State from memory the function of the Domestic Water System	[]	[]	[]
15.	Part 2-15.	IRI-01-15	State from memory the names of each Domestic Water System component	[]	[]	[]
16.	Part 2-16.	IRI-01-16	Describe the relationship associated with each Domestic Water System component as related to the Block Diagram	[]	[]	[]
17.	Part 2-17.	IRI-01-17	Describe from memory, the System flow path associated with the Domestic Water System	[]	[]	[]
18.	Part 2-18.	IRI-01-18	State, from memory the names and functions of each component within the Domestic Water System	[]	[]	[]
19.	Part 2-19.	IRI-01-19	List each Domestic Water System component's normal operating parameters	[]	[]	[]
20.	Part 2-20.	IRI-01-20	Recount the safety requirements associated with the Domestic Water System	[]	[]	[]
21.	Part 2-21.	IRI-01-21	List Precautions, Limitations and Setpoints relating to operation of the Domestic Water System	[]	[]	[]
22.	Part 2-22.	IRI-01-22	List the Pre-Operational checks needed when operating the Domestic Water System	[]	[]	[]
23.	Part 2-23.	IRI-01-23	Align the Domestic Water System for operation	[]	[]	[]
24.	Part 2-24.	IRI-01-24	Describe the Domestic Water System operation during Startup	[]	[]	[]
25.	Part 2-25.	IRI-01-25	Specify conditions associated with normal operation of the Domestic Water System	[]	[]	[]
26.	Part 2-26.	IRI-01-26	Describe the Domestic Water System operation during Shutdown operations	[]	[]	[]
27.	Part 2-27.	IRI-01-27	State from memory the function of the Irrigation Water System	[]	[]	[]
28.	Part 2-28.	IRI-01-28	State from memory the names of each Irrigation Water System component	[]	[]	[]
29.	Part 2-29.	IRI-01-29	Describe the relationship associated with each Irrigation Water System component as related to the Block Diagram	[]	[]	[]
30.	Part 2-30.	IRI-01-30	Describe from memory, the System flow path associated with the Irrigation Water System	[]	[]	[]

IRI Power Plant Operations Certification
IRI Power Plant Operator II (Site Specific Training Modules) Section
Survey Questionnaire

			Freq.	Imp.	Diff.
31.	Part 2-31.	IRI-01-31	State, from memory, the names and functions of each component within the Irrigation Water System	[]	[] []
32.	Part 2-32.	IRI-01-32	List each Irrigation Water System component's normal operating parameters	[]	[] []
33.	Part 2-33.	IRI-01-33	Recount the safety requirements associated with the Irrigation Water System	[]	[] []
34.	Part 2-34.	IRI-01-34	List Precautions, Limitations and Setpoints relating to operation of the Irrigation Water System	[]	[] []
35.	Part 2-35.	IRI-01-35	List the Pre-Operational checks needed when operating the Irrigation Water System	[]	[] []
36.	Part 2-36.	IRI-01-36	Align the Irrigation Water System for operation	[]	[] []
37.	Part 2-37.	IRI-01-37	Describe the Irrigation Water System operation during Startup	[]	[] []
38.	Part 2-38.	IRI-01-38	Specify conditions associated with normal operation of the Irrigation Water System	[]	[] []
39.	Part 2-39.	IRI-01-39	Describe the Irrigation Water System operation during Shutdown operations	[]	[] []
40.	Part 2-40.	IRI-01-40	State from memory the function of the Recovery Water System	[]	[] []
41.	Part 2-41.	IRI-01-41	State from memory the names of each Recovery Water System component	[]	[] []
42.	Part 2-42.	IRI-01-42	Describe the relationship associated with each Recovery Water System component as related to the Block Diagram	[]	[] []
43.	Part 2-43.	IRI-01-43	Describe from memory, the System flow path associated with the Recovery Water System	[]	[] []
44.	Part 2-44.	IRI-01-44	State, from memory, the names and functions of each component within the Recovery Water System	[]	[] []
45.	Part 2-45.	IRI-01-45	List each Recovery Water System component's normal operating parameters	[]	[] []
46.	Part 2-46.	IRI-01-46	Recount the safety requirements associated with the Recovery Water System	[]	[] []
47.	Part 2-47.	IRI-01-47	List Precautions, Limitations and Setpoints relating to operation of the Recovery Water System	[]	[] []
48.	Part 2-48.	IRI-01-48	List the Pre-Operational checks needed when operating the Recovery Water System	[]	[] []
49.	Part 2-49.	IRI-01-49	Align the Recovery Water System for operation	[]	[] []
50.	Part 2-50.	IRI-01-50	Describe the Recovery Water System operation during Startup	[]	[] []
51.	Part 2-51.	IRI-01-51	Specify conditions associated with normal operation of the Recovery Water System	[]	[] []
52.	Part 2-52.	IRI-01-52	Describe the Recovery Water System operation during Shutdown operations	[]	[] []
53.	Part 2-53.	IRI-02-1	State from memory the function of the Cooling Tower System No. 7	[]	[] []
54.	Part 2-54.	IRI-02-2	State from memory the names of each Cooling Tower System No. 7 component	[]	[] []
55.	Part 2-55.	IRI-02-3	Describe the relationship associated with each Cooling Tower System No. 7 component as related to the Block Diagram	[]	[] []
56.	Part 2-56.	IRI-02-4	Describe from memory, the System flow path associated with the Cooling Tower System No. 7	[]	[] []
57.	Part 2-57.	IRI-02-5	State, from memory, the names and functions of each component within the Cooling Tower System No. 7	[]	[] []
58.	Part 2-58.	IRI-02-6	List each Cooling Tower System No. 7 component's normal operating parameters	[]	[] []
59.	Part 2-59.	IRI-02-7	Recount the safety requirements associated with the Cooling Tower System No. 7	[]	[] []

IRI Power Plant Operations Certification
IRI Power Plant Operator II (Site Specific Training Modules) Section
Survey Questionnaire

			Freq.	Imp.	Diff.
60.	Part 2-60.	IRI-02-8	List Precautions, Limitations and Setpoints relating to operation of the Cooling Tower System No. 7	[]	[] []
61.	Part 2-61.	IRI-02-9	List the Pre-Operational checks needed when operating the Cooling Tower System No. 7	[]	[] []
62.	Part 2-62.	IRI-02-10	Align the Cooling Tower System No. 7 for operation	[]	[] []
63.	Part 2-63.	IRI-02-11	Describe the Cooling Tower System No. 7 operation during Startup	[]	[] []
64.	Part 2-64.	IRI-02-12	Specify conditions associated with normal operation of the Cooling Tower System No. 7	[]	[] []
65.	Part 2-65.	IRI-02-13	Describe the Cooling Tower System No. 7 operation during Shutdown operations	[]	[] []
66.	Part 2-66.	IRI-02-14	State from memory the function of the Cooling Tower System No. 9	[]	[] []
67.	Part 2-67.	IRI-02-15	State from memory the names of each Cooling Tower System No. 9 component	[]	[] []
68.	Part 2-68.	IRI-02-16	Describe the relationship associated with each Cooling Tower System No. 9 component as related to the Block Diagram	[]	[] []
69.	Part 2-69.	IRI-02-17	Describe from memory, the System flow path associated with the Cooling Tower System No. 9	[]	[] []
70.	Part 2-70.	IRI-02-18	State, from memory, the names and functions of each component within the Cooling Tower System No. 9	[]	[] []
71.	Part 2-71.	IRI-02-19	List each Cooling Tower System No. 9 component's normal operating parameters	[]	[] []
72.	Part 2-72.	IRI-02-20	Recount the safety requirements associated with the Cooling Tower System No. 9	[]	[] []
73.	Part 2-73.	IRI-02-21	List Precautions, Limitations and Setpoints relating to operation of the Cooling Tower System No. 9	[]	[] []
74.	Part 2-74.	IRI-02-22	List the Pre-Operational checks needed when operating the Cooling Tower System No. 9	[]	[] []
75.	Part 2-75.	IRI-02-23	Align the Cooling Tower System No. 9 for operation	[]	[] []
76.	Part 2-76.	IRI-02-24	Describe the Cooling Tower System No. 9 operation during Startup	[]	[] []
77.	Part 2-77.	IRI-02-25	Specify conditions associated with normal operation of the Cooling Tower System No. 9	[]	[] []
78.	Part 2-78.	IRI-02-26	Describe the Cooling Tower System No. 9 operation during Shutdown operations	[]	[] []
79.	Part 2-79.	IRI-02-27	State from memory the function of the Condenser No. 4-Tube Side	[]	[] []
80.	Part 2-80.	IRI-02-28	State from memory the names of each Condenser No. 4-Tube Side component	[]	[] []
81.	Part 2-81.	IRI-02-29	Describe the relationship associated with each Condenser No. 4-Tube Side component as related to the Block Diagram	[]	[] []
82.	Part 2-82.	IRI-02-30	Describe from memory, the System flow path associated with the Condenser No. 4-Tube Side	[]	[] []
83.	Part 2-83.	IRI-02-31	State, from memory, the names and functions of each component within the Condenser No. 4-Tube Side	[]	[] []
84.	Part 2-84.	IRI-02-32	List each Condenser No. 4-Tube Side component's normal operating parameters	[]	[] []
85.	Part 2-85.	IRI-02-33	Recount the safety requirements associated with the Condenser No. 4-Tube Side	[]	[] []
86.	Part 2-86.	IRI-02-34	List Precautions, Limitations and Setpoints relating to operation of the Condenser No. 4-Tube Side	[]	[] []
87.	Part 2-87.	IRI-02-35	List the Pre-Operational checks needed when operating the Condenser No. 4-Tube Side	[]	[] []

IRI Power Plant Operations Certification
IRI Power Plant Operator II (Site Specific Training Modules) Section
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				Freq.	Imp.	Diff.
88.	Part 2-88.	IRI-02-36	Align the Condenser No. 4-Tube Side for operation	[]	[]	[]
89.	Part 2-89.	IRI-02-37	Describe the Condenser No. 4-Tube Side operation during Startup	[]	[]	[]
90.	Part 2-90.	IRI-02-38	Specify conditions associated with normal operation of the Condenser No. 4-Tube Side	[]	[]	[]
91.	Part 2-91.	IRI-02-39	Describe the Condenser No. 4-Tube operation during Shutdown operations	[]	[]	[]
92.	Part 2-92.	IRI-02-40	State from memory the function of the Condenser No. 5-Tube Side	[]	[]	[]
93.	Part 2-93.	IRI-02-41	State from memory the names of each Condenser No. 5-Tube Side component	[]	[]	[]
94.	Part 2-94.	IRI-02-42	Describe the relationship associated with each Condenser No. 5-Tube Side component as related to the Block Diagram	[]	[]	[]
95.	Part 2-95.	IRI-02-43	Describe from memory, the System flow path associated with the Condenser No. 5-Tube Side	[]	[]	[]
96.	Part 2-96.	IRI-02-44	State, from memory, the names and functions of each component within the Condenser No. 5-Tube Side	[]	[]	[]
97.	Part 2-97.	IRI-02-45	List each Condenser No. 5-Tube Side component's normal operating parameters	[]	[]	[]
98.	Part 2-98.	IRI-02-46	Recount the safety requirements associated with the Condenser No. 5-Tube Side	[]	[]	[]
99.	Part 2-99.	IRI-02-47	List Precautions, Limitations and Setpoints relating to operation of the Condenser No. 5-Tube Side	[]	[]	[]
100.	Part 2-100.	IRI-02-48	List the Pre-Operational checks needed when operating the Condenser No. 5-Tube Side	[]	[]	[]
101.	Part 2-101.	IRI-02-49	Align the Condenser No. 5-Tube Side for operation	[]	[]	[]
102.	Part 2-102.	IRI-02-50	Describe the Condenser No. 5-Tube Side operation during Startup	[]	[]	[]
103.	Part 2-103.	IRI-02-51	Specify conditions associated with normal operation of the Condenser No. 5-Tube Side	[]	[]	[]
104.	Part 2-104.	IRI-02-52	Describe the Condenser No. 5-Tube Side operation during Shutdown operations	[]	[]	[]
105.	Part 2-105.	IRI-02-53	State from memory the function of the Condenser No. 7-Tube Side	[]	[]	[]
106.	Part 2-106.	IRI-02-54	State from memory the names of each Condenser No. 7-Tube Side component	[]	[]	[]
107.	Part 2-107.	IRI-02-55	Describe the relationship associated with each Condenser No. 7-Tube Side component as related to the Block Diagram	[]	[]	[]
108.	Part 2-108.	IRI-02-56	Describe from memory, the System flow path associated with the Condenser No. 7-Tube Side	[]	[]	[]
109.	Part 2-109.	IRI-02-57	State, from memory, the names and functions of each component within the Condenser No. 7-Tube Side	[]	[]	[]
110.	Part 2-110.	IRI-02-58	List each Condenser No. 7-Tube Side component's normal operating parameters	[]	[]	[]
111.	Part 2-111.	IRI-02-59	Recount the safety requirements associated with the Condenser No. 7-Tube Side	[]	[]	[]
112.	Part 2-112.	IRI-02-60	List Precautions, Limitations and Setpoints relating to operation of the Condenser No. 7-Tube Side	[]	[]	[]
113.	Part 2-113.	IRI-02-61	List the Pre-Operational checks needed when operating the Condenser No. 7-Tube Side	[]	[]	[]
114.	Part 2-114.	IRI-02-62	Align the Condenser No. 7-Tube Side for operation	[]	[]	[]
115.	Part 2-115.	IRI-02-63	Describe the Condenser No. 7-Tube Side operation during Startup	[]	[]	[]

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			Freq.	Imp.	Diff.	
116.	Part 2-116.	IRI-02-64	Specify conditions associated with normal operation of the Condenser No. 7-Tube Side	[]	[]	[]
117.	Part 2-117.	IRI-02-65	Describe the Condenser No. 7-Tube Side operation during Shutdown operations	[]	[]	[]
118.	Part 2-118.	IRI-02-66	State from memory the function of the Condenser No. 9-Tube Side	[]	[]	[]
119.	Part 2-119.	IRI-02-67	State from memory the names of each Condenser No. 9-Tube Side component	[]	[]	[]
120.	Part 2-120.	IRI-02-68	Describe the relationship associated with each Condenser No. 9-Tube Side component as related to the Block Diagram	[]	[]	[]
121.	Part 2-121.	IRI-02-69	Describe from memory, the System flow path associated with the Condenser No. 9-Tube Side	[]	[]	[]
122.	Part 2-122.	IRI-02-70	State, from memory, the names and functions of each component within the Condenser No. 9-Tube Side	[]	[]	[]
123.	Part 2-123.	IRI-02-71	List each Condenser No. 9-Tube Side component's normal operating parameters	[]	[]	[]
124.	Part 2-124.	IRI-02-72	Recount the safety requirements associated with the Condenser No. 9-Tube Side	[]	[]	[]
125.	Part 2-125.	IRI-02-73	List Precautions, Limitations and Setpoints relating to operation of the Condenser No. 9-Tube Side	[]	[]	[]
126.	Part 2-126.	IRI-02-74	List the Pre-Operational checks needed when operating the Condenser No. 9-Tube Side	[]	[]	[]
127.	Part 2-127.	IRI-02-75	Align the Condenser No. 9-Tube Side for operation	[]	[]	[]
128.	Part 2-128.	IRI-02-76	Describe the Condenser No. 9-Tube Side operation during Startup	[]	[]	[]
129.	Part 2-129.	IRI-02-77	Specify conditions associated with normal operation of the Condenser No. 9-Tube Side	[]	[]	[]
130.	Part 2-130.	IRI-02-78	Describe the Condenser No. 9-Tube Side operation during Shutdown operations	[]	[]	[]
131.	Part 2-131.	IRI-03-1	State from memory the function of the Reverse Osmosis System No. 1	[]	[]	[]
132.	Part 2-132.	IRI-03-2	State from memory the names of each Reverse Osmosis System No. 1 component	[]	[]	[]
133.	Part 2-133.	IRI-03-3	Describe the relationship associated with each Reverse Osmosis System No. 1 component as related to the Block Diagram	[]	[]	[]
134.	Part 2-134.	IRI-03-4	Describe from memory, the System flow path associated with the Reverse Osmosis System No. 1	[]	[]	[]
135.	Part 2-135.	IRI-03-5	State, from memory, the names and functions of each component within the Reverse Osmosis System No. 1	[]	[]	[]
136.	Part 2-136.	IRI-03-6	List each Reverse Osmosis System No. 1 component's normal operating parameters	[]	[]	[]
137.	Part 2-137.	IRI-03-7	Recount the safety requirements associated with the Reverse Osmosis System No. 1	[]	[]	[]
138.	Part 2-138.	IRI-03-8	List Precautions, Limitations and Setpoints relating to operation of the Reverse Osmosis System No. 1	[]	[]	[]
139.	Part 2-139.	IRI-03-9	List the Pre-Operational checks needed when operating the Reverse Osmosis System No. 1	[]	[]	[]
140.	Part 2-140.	IRI-03-10	Align the Reverse Osmosis System No. 1 for operation	[]	[]	[]
141.	Part 2-141.	IRI-03-11	Describe the Reverse Osmosis System No. 1 operation during Startup	[]	[]	[]
142.	Part 2-142.	IRI-03-12	Specify conditions associated with normal operation of the Reverse Osmosis System No. 1	[]	[]	[]
143.	Part 2-143.	IRI-03-13	Describe the Reverse Osmosis System No. 1 operation during Shutdown operations	[]	[]	[]

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			Freq.	Imp.	Diff.	
144.	Part 2-144.	IRI-03-14	State from memory the function of the Reverse Osmosis System No. 2	[]	[]	[]
145.	Part 2-145.	IRI-03-15	State from memory the names of each Reverse Osmosis System No. 2 component	[]	[]	[]
146.	Part 2-146.	IRI-03-16	Describe the relationship associated with each Reverse Osmosis System No. 2 component as related to the Block Diagram	[]	[]	[]
147.	Part 2-147.	IRI-03-17	Describe from memory, the System flow path associated with the Reverse Osmosis System No. 2	[]	[]	[]
148.	Part 2-148.	IRI-03-18	State, from memory, the names and functions of each component within the Reverse Osmosis System No. 2	[]	[]	[]
149.	Part 2-149.	IRI-03-19	List each Reverse Osmosis System No. 2 component's normal operating parameters	[]	[]	[]
150.	Part 2-150.	IRI-03-20	Recount the safety requirements associated with the Reverse Osmosis System No. 2	[]	[]	[]
151.	Part 2-151.	IRI-03-21	List Precautions, Limitations and Setpoints relating to operation of the Reverse Osmosis System No. 2	[]	[]	[]
152.	Part 2-152.	IRI-03-22	List the Pre-Operational checks needed when operating the Reverse Osmosis System No. 2	[]	[]	[]
153.	Part 2-153.	IRI-03-23	Align the Reverse Osmosis System No. 2 for operation	[]	[]	[]
154.	Part 2-154.	IRI-03-24	Describe the Reverse Osmosis System No. 2 operation during Startup	[]	[]	[]
155.	Part 2-155.	IRI-03-25	Specify conditions associated with normal operation of the Reverse Osmosis System No. 2	[]	[]	[]
156.	Part 2-156.	IRI-03-26	Describe the Reverse Osmosis System No. 2 operation during Shutdown operations	[]	[]	[]
157.	Part 2-157.	IRI-04-1	State from memory the function of the Demineralizer Train No. 1	[]	[]	[]
158.	Part 2-158.	IRI-04-2	State from memory the names of each Demineralizer Train No. 1 component	[]	[]	[]
159.	Part 2-159.	IRI-04-3	Describe the relationship associated with each Demineralizer Train No. 1 component as related to the Block Diagram	[]	[]	[]
160.	Part 2-160.	IRI-04-4	Describe from memory, the System flow path associated with the Demineralizer Train No. 1	[]	[]	[]
161.	Part 2-161.	IRI-04-5	State, from memory, the names and functions of each component within the Demineralizer Train No. 1	[]	[]	[]
162.	Part 2-162.	IRI-04-6	List each Demineralizer Train No. 1 component's normal operating parameters	[]	[]	[]
163.	Part 2-163.	IRI-04-7	Recount the safety requirements associated with the Demineralizer Train No. 1	[]	[]	[]
164.	Part 2-164.	IRI-04-8	List Precautions, Limitations and Setpoints relating to operation of the Demineralizer Train No. 1	[]	[]	[]
165.	Part 2-165.	IRI-04-9	List the Pre-Operational checks needed when operating the Demineralizer Train No. 1	[]	[]	[]
166.	Part 2-166.	IRI-04-10	Align the Demineralizer Train No. 1 for operation	[]	[]	[]
167.	Part 2-167.	IRI-04-11	Describe the Demineralizer Train No. 1 operation during Startup	[]	[]	[]
168.	Part 2-168.	IRI-04-12	Specify conditions associated with normal operation of the Demineralizer Train No. 1	[]	[]	[]
169.	Part 2-169.	IRI-04-13	Describe the Demineralizer Train No. 1 operation during Shutdown operations	[]	[]	[]
170.	Part 2-170.	IRI-04-14	State from memory the function of the Demineralizer Train No. 2	[]	[]	[]
171.	Part 2-171.	IRI-04-15	State from memory the names of each Demineralizer Train No. 2 component	[]	[]	[]
172.	Part 2-172.	IRI-04-16	Describe the relationship associated with each Demineralizer Train No. 2 component as related to the Block Diagram	[]	[]	[]

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			Freq.	Imp.	Diff.
173.	Part 2-173.	IRI-04-17	Describe from memory, the System flow path associated with the Demineralizer Train No. 2	[]	[]
174.	Part 2-174.	IRI-04-18	State, from memory, the names and functions of each component within the Demineralizer Train No. 2	[]	[]
175.	Part 2-175.	IRI-04-19	List each Demineralizer Train No. 2 component's normal operating parameters	[]	[]
176.	Part 2-176.	IRI-04-20	Recount the safety requirements associated with the Demineralizer Train No. 2	[]	[]
177.	Part 2-177.	IRI-04-21	List Precautions, Limitations and Setpoints relating to operation of the Demineralizer Train No. 2	[]	[]
178.	Part 2-178.	IRI-04-22	List the Pre-Operational checks needed when operating the Demineralizer Train No. 2	[]	[]
179.	Part 2-179.	IRI-04-23	Align the Demineralizer Train No. 2 for operation	[]	[]
180.	Part 2-180.	IRI-04-24	Describe the Demineralizer Train No. 2 operation during Startup	[]	[]
181.	Part 2-181.	IRI-04-25	Specify conditions associated with normal operation of the Demineralizer Train No. 2	[]	[]
182.	Part 2-182.	IRI-04-26	Describe the Demineralizer Train No. 2 operation during Shutdown operations	[]	[]
183.	Part 2-183.	IRI-04-27	State from memory the function of the Demineralizer Train No. 3	[]	[]
184.	Part 2-184.	IRI-04-28	State from memory the names of each Demineralizer Train No. 3 component	[]	[]
185.	Part 2-185.	IRI-04-29	Describe the relationship associated with each Demineralizer Train No. 3 component as related to the Block Diagram	[]	[]
186.	Part 2-186.	IRI-04-30	Describe from memory, the System flow path associated with the Demineralizer Train No. 3	[]	[]
187.	Part 2-187.	IRI-04-31	State, from memory, the names and functions of each component within the Demineralizer Train No. 3	[]	[]
188.	Part 2-188.	IRI-04-32	List each Demineralizer Train No. 3 component's normal operating parameters	[]	[]
189.	Part 2-189.	IRI-04-33	Recount the safety requirements associated with the Demineralizer Train No. 3	[]	[]
190.	Part 2-190.	IRI-04-34	List Precautions, Limitations and Setpoints relating to operation of the Demineralizer Train No. 3	[]	[]
191.	Part 2-191.	IRI-04-35	List the Pre-Operational checks needed when operating the Demineralizer Train No. 3	[]	[]
192.	Part 2-192.	IRI-04-36	Align the Demineralizer Train No. 3 for operation	[]	[]
193.	Part 2-193.	IRI-04-37	Describe the Demineralizer Train No. 3 operation during Startup	[]	[]
194.	Part 2-194.	IRI-04-38	Specify conditions associated with normal operation of the Demineralizer Train No. 3	[]	[]
195.	Part 2-195.	IRI-04-39	Describe the Demineralizer Train No. 3 operation during Shutdown operations	[]	[]

**IRI Power Plant Operations Certification
IRI Power Plant Operator III (Advanced Heat Rate Improvement) Section
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**Part 3
IRI Power Plant Operator III
Heat Rate Improvement Section**

IRI Power Plant Operations Certification
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			Freq.	Imp.	Diff.	
1.	Part 3-1.	HR001-1	Define the term “heat rate” and describe how the heat rate for a typical generating unit can be determined	[]	[]	[]
2.	Part 3-2.	HR001-2	Explain why as unit’s net heat rate is higher than its gross heat rate	[]	[]	[]
3.	Part 3-3.	HR001-3	Define the term “design heat rate” and explain why a unit’s design heat rate is generally difficult to attain	[]	[]	[]
4.	Part 3-4.	HR001-4	Describe how efficiency is normally expressed and list typical generating unit and component efficiencies	[]	[]	[]
5.	Part 3-5.	HR001-5	Describe how to determine unit and component efficiency	[]	[]	[]
6.	Part 3-6.	HR001-6	Describe how operators help maintain the efficient operation of a power plant	[]	[]	[]
7.	Part 3-7.	HR001-7	Describe how maintenance personnel contribute to the efficient operation of a power plant	[]	[]	[]
8.	Part 3-8.	HR001-8	Describe how engineers contribute to the efficient operation of a power plant	[]	[]	[]
9.	Part 3-9.	HR002-1	Define “heat transfer”	[]	[]	[]
10.	Part 3-10.	HR002-2	Identify the three forms of heat transfer	[]	[]	[]
11.	Part 3-11.	HR002-3	Identify factors that affect conduction heat transfer, that affect convection heat transfer, and that affect radiation heat transfer	[]	[]	[]
12.	Part 3-12.	HR002-4	Describe the two formulas that can be used to determine that rate of heat transfer when the process involves a change in temperature	[]	[]	[]
13.	Part 3-13.	HR002-5	Describe the formula used to determine that rate of heat transfer when there is no change in temperature during the process, only a change in enthalpy	[]	[]	[]
14.	Part 3-14.	HR002-6	Determine the rate of heat transfer for a typical economizer	[]	[]	[]
15.	Part 3-15.	HR002-7	Describe how changes in the condition of an economizer can affect the rate of heat transfer and plant efficiency	[]	[]	[]
16.	Part 3-16.	HR002-8	Determine the rate of heat transfer for a typical condenser	[]	[]	[]
17.	Part 3-17.	HR002-9	Describe how changes in the condition of a condenser can affect the rate of heat transfer and plant efficiency	[]	[]	[]
18.	Part 3-18.	HR003-1	Define the term “thermodynamics”	[]	[]	[]
19.	Part 3-19.	HR003-2	Identify the information required to conduct a thermodynamic study	[]	[]	[]
20.	Part 3-20.	HR003-3	Explain what enthalpy is and describe its relationship to plant efficiency	[]	[]	[]
21.	Part 3-21.	HR003-4	Describe the first and second laws of thermodynamics and explain how they relate to the steam/water cycle	[]	[]	[]
22.	Part 3-22.	HR003-5	Explain Clausius’ axiom and Planck’s axiom of thermodynamics	[]	[]	[]
23.	Part 3-23.	HR003-6	Describe how a temperature/entropy chart can be used to plot a processes	[]	[]	[]
24.	Part 3-24.	HR003-7	Describe how a temperature/entropy chart can be used to compare the efficiencies of two processes	[]	[]	[]
25.	Part 3-25.	HR003-8	Describe how a temperature/entropy chart can be used to compare the effects of changing process parameters	[]	[]	[]
26.	Part 3-26.	HR004-1	Describe the basic thermodynamics processes associated with a typical steam/water cycle and explain how to plot them on a temperature/entropy chart	[]	[]	[]
27.	Part 3-27.	HR004-2	Explain the Rankine method of determining cycle efficiency	[]	[]	[]
28.	Part 3-28.	HR004-3	Describe the effects of single and multiple reheaters on the efficiency of a steam/water cycle	[]	[]	[]
29.	Part 3-29.	HR004-4	Describe the effects of feedwater heaters and economizers on the efficiency of a steam/water cycle	[]	[]	[]
30.	Part 3-30.	HR004-5	Describe the effects of varying main steam temperature, reheat steam temperature, and main steam pressure on the efficiency of a steam/water cycle	[]	[]	[]

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31.	Part 3-31.	HR004-6	Describe the effects of varying condenser vacuum, degrees of subcooling in the condenser, and final feedwater outlet temperature on the efficiency of a steam/water cycle	[] [] []
32.	Part 3-32.	HR005-1	Explain what a boiler envelope is and identify components typically located within the boiler envelope	[] [] []
33.	Part 3-33.	HR005-2	Describe types of energy that flow into and out of the boiler envelope	[] [] []
34.	Part 3-34.	HR005-3	Identify three major factors that affect boiler efficiency	[] [] []
35.	Part 3-35.	HR005-4	Describe, in general terms, the input/output method of determining boiler efficiency	[] [] []
36.	Part 3-36.	HR005-5	Describe several factors that affect boiler output energy and several factors that affect boiler input energy	[] [] []
37.	Part 3-37.	HR005-7	Describe the main difference between the heat loss method and the input/output method of determining boiler efficiency	[] [] []
38.	Part 3-38.	HR005-8	Explain how to determine boiler efficiency using the heat loss method	[] [] []
39.	Part 3-39.	HR005-9	Describe how boiler parameters may affect boiler efficiency as determined by the heat loss method	[] [] []
40.	Part 3-40.	HR010-1	Describe how the windbox, the burner registers, the burners, and the furnace operate together to sustain combustion	[] [] []
41.	Part 3-41.	HR010-2	Describe problems commonly associated with the windbox	[] [] []
42.	Part 3-42.	HR010-3	Describe how airflow can be balanced by adjusting the burner registers	[] [] []
43.	Part 3-43.	HR010-4	Describe the effects of adjusting burner tilts	[] [] []
44.	Part 3-44.	HR010-5	Identify common burner problems and describe how they can be recognized	[] [] []
45.	Part 3-45.	HR010-6	Describe problems commonly associated with furnaces	[] [] []
46.	Part 3-46.	HR011-1	Explain why a primary superheater and secondary superheater are normally connected in series to superheat steam	[] [] []
47.	Part 3-47.	HR011-2	Describe how a decrease in main steam temperature affects boiler efficiency and heat rate	[] [] []
48.	Part 3-48.	HR011-3	Identify common causes of a decrease in main steam temperature	[] [] []
49.	Part 3-49.	HR011-4	Explain how a reheater maintains hot reheat steam temperature	[] [] []
50.	Part 3-50.	HR011-5	Describe how changes in hot reheat steam temperature affect boiler efficiency and heat rate	[] [] []
51.	Part 3-51.	HR011-6	Identify common causes of a decrease in hot reheat steam temperature	[] [] []
52.	Part 3-52.	HR011-7	Explain how attemperators limit steam temperature and describe the impact that attemperators have on boiler efficiency and unit heat rate	[] [] []
53.	Part 3-53.	HR011-8	Describe how boiler efficiency and unit heat rate are affected by a decrease in main steam temperature, by a decrease in economizer outlet water temperature and by an increase in boiler exit gas temperature	[] [] []
54.	Part 3-54.	HR011-9	Describe how boiler efficiency and unit heat rate are affected by steam leaks, water leaks, fuel leaks, and air leaks	[] [] []
55.	Part 3-55.	HR011-10	Describe how steam leaks, water leaks, fuel leaks, and air leaks can be recognized	[] [] []
56.	Part 3-56.	HR011-11	Describe how boiler efficiency and unit heat rate are affected by problems associated with the furnace flame	[] [] []
57.	Part 3-57.	HR014-1	Explain how the blades of a typical turbine are shaped to convert energy to work	[] [] []
58.	Part 3-58.	HR014-2	Describe how steam conditions at the inlet to the turbine affect turbine efficiency	[] [] []

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				Freq. Imp. Diff.
59.	Part 3-59.	HR014-3	Explain how chemical deposits on internal turbine components affect turbine efficiency and unit heat rate	[] [] []
60.	Part 3-60.	HR014-4	Identify ways to minimize chemical deposits and solid particle erosion	[] [] []
61.	Part 3-61.	HR014-5	Explain how problems with the spill strip packing and packing rings can affect turbine efficiency and unit heat rate	[] [] []
62.	Part 3-62.	HR014-6	Explain how problems with the seals between the casing and the rotor can affect turbine efficiency and unit heat rate	[] [] []
63.	Part 3-63.	HR017-1	Identify the energy flows that enter and exit a condenser and describe how to determine the amount of energy in each energy flow	[] [] []
64.	Part 3-64.	HR017-2	Explain how to calculate the efficiency of a condenser	[] [] []
65.	Part 3-65.	HR017-3	Identify parameters and indicators that can be used to check the performance of a condenser	[] [] []
66.	Part 3-66.	HR017-4	Explain what condenser performance curves are and how they can be used to check the performance of a condenser	[] [] []
67.	Part 3-67.	HR017-5	Describe how circulating water pump selection curves can be used to predict when changes in pump operation will be needed and to check condenser performance	[] [] []
68.	Part 3-68.	HR017-6	Describe how an increase in condenser vacuum and how a decrease in condenser vacuum can affect unit heat rate and operating costs	[] [] []
69.	Part 3-69.	HR019-1	Describe the normal operation of a closed feedwater heater and the normal operation of an open feedwater heater	[] [] []
70.	Part 3-70.	HR019-2	Describe methods that an operator can use to check the performance of a feedwater heater	[] [] []
71.	Part 3-71.	HR019-3	Identify some typical operating problems that may develop in feedwater heaters	[] [] []
72.	Part 3-72.	HR019-4	Describe the effects of feedwater heater operating problems on the terminal temperature difference (TTD) and the drain cooler approach (DCA)	[] [] []
73.	Part 3-73.	HR019-5	Describe typical procedures that may be followed in troubleshooting a feedwater heater problem	[] [] []