GOBIERNO DE PUERTO RICO
JUNTA REGLAMENTADORA DE SERVICIO PÚBLICO
NEGOCIADO DE ENERGÍA DE PUERTO RICO

IN RE: **SOLICITUD DE PROPUESTAS PARA GENERACION TEMPORERA DE EMERGENCIA**	CASE NUM.: NEPR-AP-2020-0001 SUBJECT: Aprobación de Presupuesto para reparación de las Unidades CS-5 y CS-6 de la Central Costa Sur, requerimiento de medidas de respuesta a la demanda y presentaci6n de ciertos informes de progreso.

MOCIÓN PARA INFORMAR PROGRESO DE REPARACIONES

AL HONORABLE NEGOCIADO DE ENERGÍA:

COMPARECE la Autoridad de Energía Eléctrica de Puerto Rico a través de su representación legal y muy respetuosamente expone y solicita:

1. El pasado 22 de mayo de 2020, el Negociado de Energía de la Junta Reglamentadora del Servicio Público (el "Negociado de Energía") emitió una Resolución y Orden relacionada, entro otras cosas, a las reparaciones de las Unidades 5 y 6 de la Central Costa Sur y también a las reparaciones a la Unidad 2 de la Central Aguirre (la "Orden") de la Autoridad de Energía Eléctrica de Puerto Rico (la "Autoridad").

2. La Orden dirige a la Autoridad a presentar reportes de progreso de las reparaciones a la Unidad 5 y 6, incluyendo los gastos incurridos y los contratos que se han otorgado.[1] En respuesta a dicha Orden, la Autoridad presenta al Negociado de Energía el reporte titulado *Costa Sur Unit 5 Damage Assessment and Repairs Progress Status Report* fechado del 29 de mayo de 2020. Exhibit A. A pesar de que dicho informe refleja retrasos en algunas tareas, la fecha de regreso

[1] Orden en Sec II.

de la Unidad 5 a servicio no ha cambiado. Se acompaña, además, copia de todos los contratos que se han otorgado con relación a las reparaciones de ambas unidades. Exhibit B.

3. En relación con la Unidad 6 de la Central Costa Sur, la Autoridad presenta el informe titulado *Costa Sur Unit 6 Damage Assessment and Repairs Progress Status* fechado del día de hoy. Exhibit C. Este informe muestra los esfuerzos que está realizando la Autoridad para evaluar los daños de la Unidad 6, las metas para lograr dicha reparación y los siguientes pasos para lograr la meta: es regresar la unidad a operación comercial. *Id.* La Autoridad presenta, además, un reporte detallado de las inspecciones que se han realizado a dicha unidad. Exhibit D.

4. La Autoridad no presenta un informe detallado de progreso de reparación de la Unidad 2 de la Central Aguirre ya que la reparación de la misma ha sido completada y la unidad está en operación comercial.

POR TODO LO CUAL, la Autoridad respetuosamente solicita al Negociado de Energía que anote el cumplimiento de la Autoridad con la Orden.

RESPETUOSAMENTE SOMETIDO.

En San Juan, Puerto Rico, este 28 de mayo de 2020.

/s Katiuska Bolaños
Katiuska Bolaños
kbolanos@diazvaz.law
TSPR 18888

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CERTIFICADO DE NOTIFICACIÓN

Certifico que, en el día de hoy he radicado esta moción utilizando el sistema electrónico de radicación del Negociado de Energía en la siguiente dirección: http://radicacion.energia.pr.gov y, además, que he enviado copia de cortesía vía correo electrónico arstgo2@gmail.com; rolando@bufeteemmanuelli.com; jessica@bufete-emmanuelli.com; notificaciones@bufete-emmanuelli.com; pedrosaade5@gmail.com; larroyo@earthjustice.org.

En San Juan, Puerto Rico, a 28 de mayo de 2020.

s/ Katiuska Bolaños
Katiuska Bolaños

Exhibit A

Costa Sur Unit 5 Damage Assessment and Repairs Progress Status Report
May 29, 2020

Puerto Rico
Electric Power
Authority

Puerto Rico Electric Power Authority (PREPA)

Costa Sur Unit 5 Damage Assessment and Repairs
Progress Status Report
May 29, 2020

Introduction and Outline

Introduction

- PREPA is currently assessing the extent of the damages suffered in the Costa Sur power plant facility
- The goal, if achievable, is to repair the most critical elements of the plant and place Unit 5 in commercial operations as soon as possible
- This report outlines PREPA's progress in its assessment, repairs, and procurement activities related to Costa Sur Unit 5

Report Outline **Page #**

Report Submitted as of May 29, 2020

Unit 5 Executive Summary

35.0%	38.8%
% Completion	Time Elapsed

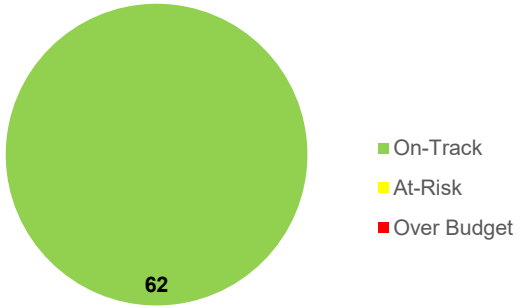
Management Notes:

- Delayed or overdue tasks are mainly related to workstreams assigned to PREPA's staff; PMO is currently working to potentially reallocate staff from other plants and reincorporate complete Costa Sur staff resources
- Main workstreams to watch-out for include: Main Control Room Repairs, Condenser Circulator Pipe Coating Activities, Condensate Water Tank 5 Repairs, and Phase 2 of Structural Repairs
- Main workstreams ahead of schedule include: Boiler Crossover Link – Desuperheater Replacement, Boiler Burner System Repairs, and Condensate Water Tanks Temporary Connection

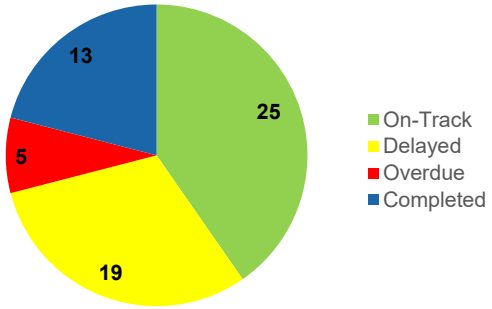
Scope and Metrics by Workstream

62	13	1
Identified Workstreams	Workstreams at 100% Completion	Workstreams Added *(Since Last Report)*

Budget



Schedule



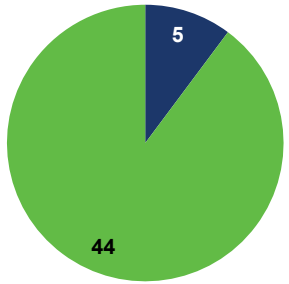
Financials

Budget Baseline	$25,200,000

$224,926	$1,892,466
Total YTD Disbursements	Total YTD Amount Invoiced

$23,307,534
Balance Available
(Based on Invoices)

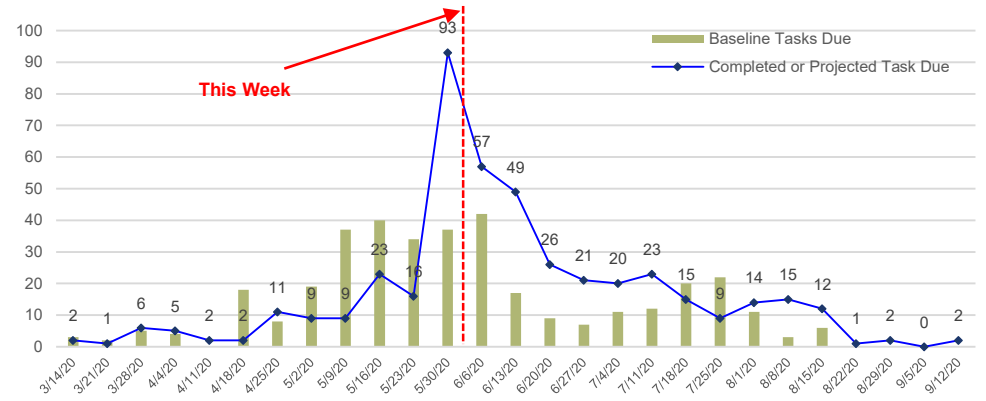
Procurement Status



89.8%
% Procurements Completed

49	15	$14.4M
Total Procurements	Emergency Procurements	Amount Contracts Awarded

Schedule Work Breakdown



Schedule Metrics

453	98	93
Total Scheduled Tasks	Pending Tasks On-Track	Tasks Due This Week
109	131	57
YTD Tasks Completed	Pending Tasks Delayed	Tasks Due Next Week
	115	153
	Pending Tasks Overdue	Tasks Due in June

Avg. Weekly Headcount (*Assigned to U5 Repairs*)

142	294
PREPA's Avg. Headcount	**Avg. Total Weekly Headcount**
152	
Contractor's Avg. Headcount	

Unit 5 Project Summary by Workstream

ID	Workstream Description	Est. Cost	Resources Assigned	% Complete	Scheduled Start	Scheduled Finish	Status	Tasks Completed	Tasks Pending
1	Exterior Inspection Boiler Units 5 &6	$83,170	Caribe GE International Energy	100.00%	3/9/2020	3/30/2020	Completed	3	0
2	Preliminary Structural Inspection Works Units 3,4, 5 and 6	$337,735	Caribe GE International Energy	100.00%	1/20/2020	1/30/2020	Completed	1	0
3	Initial Assessment High Energy Piping Post Seismic Event Units 5 and 6	$22,540	Caribe GE International Energy	100.00%	2/3/2020	2/6/2020	Completed	1	0
4	Initial Lead Removal for Immediate Repair Works Units 3,4 and 5	$86,941	Enersys Engineering Corp.	100.00%	2/3/2020	3/25/2020	Completed	1	0
5	Immediate Repair Works for Safety and Continuing Inspection Works Units 3, 4 , and 5	$0	Enersys Engineering Corp.	100.00%	2/7/2020	3/3/2020	Completed	1	0
6	Water and Fuel Tanks Condition Survey (20 tanks)	$134,448	Heinsen Global	100.00%	2/10/2020	3/22/2020	Completed	1	0
7	Interior Inspection Work Boilers Units 5 and 6	$66,030	Caribe GE International Energy	100.00%	2/17/2020	4/7/2020	Completed	1	0
8	Condition Survey and Testing for Concrete Pedestals for Power Turbine and Generator Units 5 and 6	$55,160	Heinsen Global	95.00%	3/6/2020	5/29/2020	On Track	0	1
9	Inspection and Condition Survey Water Tunnel Condensers 5 and 6	$83,100	Marine Diving	100.00%	3/9/2020	5/27/2020	Completed	4	0
10	Geotechnical Post Seismic Event Condition Survey	$349,047	PREPA, Earth Engineers, PSC	66.00%	3/12/2020	7/2/2020	Delayed	4	1
11	Project Management and Inspection Team for Rehabilitation Unit 5	$1,020,000	PREPA, Contractor TBD	79.00%	1/7/2020	7/3/2020	On Track	0	1

Overarching Workstream Initiatives

- Eng. & Technical Studies
- U5 Structural Repairs
- Condensate Water Tank Repairs
- Aux. Equipment Repairs
- Civil & Other Reconstruction
- Emergency Declaration
- Asbestos Removal & Disposing
- Lead Removal Works
- Boiler Unit 5 Works
- Crossover Link Desuperheater
- Operational Test & Control Tasks
- MPT Test and Repair Dikes
- Turbine Inspection & Repairs
- Generator Inspection & Repairs
- Other Works

Unit 5 Project Summary by Workstream (Cont'd)

ID	Workstream Description	Est. Cost	Resources Assigned	% Complete	Scheduled Start	Scheduled Finish	Status	Tasks Completed	Tasks Pending
12	Lead Removal Works for Units 1-6 (Phase 2, 3 and 4)	$1,111,843	PREPA, JR Industrial Contractors	17.00%	3/30/2020	8/25/2020	Delayed	3	1
12A	Asbestos Removal and Disposal Unit 5	$199,000	Caribe Hydroblasting	33.00%	3/23/2020	7/25/2020	Delayed	3	1
13	Structure Steel Repair Works Units 5 - phase 2	$4,000,000	PREPA, General Electric Fieldcore (GEF)	20.00%	3/23/2020	7/28/2020	Delayed	3	1
14	Structure Steel Repair Works Units 5 - phase 3 & 4		General Electric Fieldcore (GEF)	20.00%	5/11/2020	7/7/2020	On Track	0	2
15	Structure Steel Repair Works Units 1 and 2 phase 2		General Electric Fieldcore (GEF)	0.00%	7/13/2020	8/28/2020	Delayed	0	1
16	Structure Steel Repair Works Units 3 and 4 - phase 2 and 3		General Electric Fieldcore (GEF)	0.00%	7/13/2020	9/12/2020	Delayed	0	1
17	Structural Steel Repair Works Unit 6 - phase 2, 3 and 4		General Electric Fieldcore (GEF)	0.00%	7/20/2020	9/12/2020	On Track	0	2
18	Boiler Unit 5 Interior Works	$500,000	PREPA	21.00%	5/11/2020	7/11/2020	Delayed	7	75
19	Boiler Unit 5 Preparation (Boiler Wash & Others)	$1,000,000	Induchem	100.00%	4/13/2020	4/29/2020	Completed	13	0
20	Temporary Connection Condensate Water Tanks 3 and 4	$220,800	Enersys Engineering Corp.	90.00%	4/15/2020	6/12/2020	On Track	0	1
22	Condensate Water Tank Design and Construction	$750,000	PREPA, Heinsen, RG Engineering	52.00%	4/15/2020	7/31/2020	Delayed	3	1
24	Demineralized Water Treatment Demi RO and Demi Resina	$840,000	Enersys Engineering Corp.	65.00%	3/24/2020	7/27/2020	On Track	0	1

Overarching Workstream Initiatives

- Eng. & Technical Studies
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- Lead Removal Works
- Boiler Unit 5 Works
- Crossover Link Desuperheater
- Operational Test & Control Tasks
- MPT Test and Repair Dikes
- Turbine Inspection & Repairs
- Generator Inspection & Repairs
- Other Works

Unit 5 Project Summary by Workstream (Cont'd)

ID	Workstream Description	Est. Cost	Resources Assigned	% Complete	Scheduled Start	Scheduled Finish	Status	Tasks Completed	Tasks Pending
25	Existing 50 Ton Crane	$78,492	Enersys Engineering Corp., Vital Energy	99.00%	4/22/2020	6/2/2020	Overdue	1	1
26	Civil and Interior Works at Unit 5 Control Room	$328,215	ALL Contractors & Services Corp	5.00%	4/6/2020	7/21/2020	Delayed	1	1
27	Compressor Room Demolition and Reconstruction		ALL Contractors & Services Corp	0.00%	5/25/2020	7/14/2020	Delayed	0	1
28	Engineering Room Demolition and Reconstruction		ALL Contractors & Services Corp	0.00%	5/25/2020	7/2/2020	On Track	0	1
29	Civil Repair Work Shift Engineer Room		ALL Contractors & Services Corp	5.00%	5/11/2020	7/18/2020	On Track	0	1
30	Boilers Crossover links - Desuperheater Replacement	$1,800,000	PREPA, General Electric Fieldcore (GEF)	49.00%	4/20/2020	6/26/2020	On Track	25	30
31	Mechanical Inspection, Repair & Alignment (Fans and Pumps)	$120,000	PREPA	29.00%	5/5/2020	8/10/2020	Delayed	21	117
32	Non Destructive Test on Steam piping Unit 5	$250,000	Alonso & Carus Iron Works	13.00%	5/18/2020	7/10/2020	Delayed	0	1
33	Line Valves Overhaul	$49,230	Ensysa	58.00%	4/27/2020	7/3/2020	On Track	1	8
34	Safety Valves Repair	$0	PREPA	100.00%	1/7/2020	1/7/2020	Completed	1	0
36	New Overhead Crane	$1,556,943	Master Link	90.00%	3/9/2020	5/26/2020	Overdue	1	1
37	Boiler Insulation Activities	$700,000	PREPA	0.00%	5/25/2020	8/21/2020	Delayed	0	2

Overarching Workstream Initiatives

- Eng. & Technical Studies
- U5 Structural Repairs
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- Lead Removal Works
- Boiler Unit 5 Works
- Crossover Link Desuperheater
- Operational Test & Control Tasks
- MPT Test and Repair Dikes
- Turbine Inspection & Repairs
- Generator Inspection & Repairs
- Other Works

Unit 5 Project Summary by Workstream (Cont'd)

ID	Workstream Description	Est. Cost	Resources Assigned	% Complete	Scheduled Start	Scheduled Finish	Status	Tasks Completed	Tasks Pending
38	Condenser Unit 5 Activities	$180,000	PREPA, Malnat	0.00%	7/2/2020	8/12/2020	Delayed	0	14
39	Condensate Recirculation Discharge Pipe (12 ft diameter)	$900,000	Malnat	15.00%	5/11/2020	7/31/2020	On Track	0	1
41	Cargo Elevators	$60,000	Vertech, Inc.	100.00%	4/8/2020	4/8/2020	Completed	1	0
42	Inspection on High Energy Supports (Pipe Hangers)	$250,000	Contractor TBD	0.00%	6/4/2020	7/17/2020	Delayed	0	1
43	Metering Station, Automation, TWI, Opacimeters 5-6, and Oil Flush Turbine U. 5	$1,812,000	PREPA, LT Automation, Schneider	15.00%	5/16/2020	8/10/2020	Delayed	1	7
44	DCS Foxboro Inspection - Boilers	$60,000	PREPA	0.00%	7/1/2020	7/22/2020	On Track	0	1
45	Mark VI Turbines Inspection	$60,000	PREPA	0.00%	7/1/2020	7/22/2020	On Track	0	1
46	Trip Test Boilers and Turbine	$6,000	PREPA	0.00%	7/22/2020	8/3/2020	On Track	0	1
47	Natural Gas System Activities	$1,000,000	PREPA, ALL Contractors & Services Corp	11.00%	4/30/2020	9/30/2020	Delayed	0	5
49	Reestablish Potable Water System	$12,000	PREPA	100.00%	4/25/2020	5/8/2020	Completed	1	0
50	Reestablish of Compressed Gases, Sulfuric Acid, CO2 and Caustic Soda System	$12,000	Contractor TBD	0.00%	6/29/2020	6/30/2020	On Track	0	1
51	Blow off Pumps Test	$6,000	PREPA	0.00%	6/29/2020	7/4/2020	On Track	0	1

Overarching Workstream Initiatives

- Eng. & Technical Studies
- U5 Structural Repairs
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- Aux. Equipment Repairs
- Civil & Other Reconstruction
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- Asbestos Removal & Disposing
- Lead Removal Works
- Boiler Unit 5 Works
- Crossover Link Desuperheater
- Operational Test & Control Tasks
- MPT Test and Repair Dikes
- Turbine Inspection & Repairs
- Generator Inspection & Repairs
- Other Works

Unit 5 Project Summary by Workstream (Cont'd)

ID	Workstream Description	Est. Cost	Resources Assigned	% Complete	Scheduled Start	Scheduled Finish	Status	Tasks Completed	Tasks Pending
52	Boiler Prestart-Up Jobs / Hydrostatic Test	$6,000	PREPA	0.00%	8/7/2020	8/12/2020	On Track	0	3
53	Temporary Laboratory Preparation and Commissioning Trailer	$70,000	Contractor TBD	0.00%	5/25/2020	6/2/2020	Overdue	0	1
54	Temporary Office for Shift Engineer Trailer	$147,650	ALL Contractors & Services Corp	0.00%	5/28/2020	6/6/2020	Overdue	0	1
55	New Laboratory and Administration Building	$2,400,000	Contractor TBD	0.00%	5/25/2020	8/15/2020	On Track	0	1
56	Unit 5 Star Up and Commissioning Test	$72,000	PREPA	0.00%	8/4/2020	8/14/2020	On Track	0	1
48	MPT 5 Secondary Containment repairs	$85,812	5 Senses Solutions, LLC	15.00%	5/4/2020	6/19/2020	On Track	0	1
57	MPT 4 Secondary Containment repairs		5 Senses Solutions, LLC	10.00%	5/4/2020	7/6/2020	On Track	0	1
58	MPT 6 Secondary Containment repairs		5 Senses Solutions, LLC	10.00%	5/6/2020	6/9/2020	On Track	0	1
59	Mitigation of contaminated terrain switchyard 115kV, Autotransformer	$20,000	5 Senses Solutions, LLC	62.00%	4/8/2020	6/3/2020	Overdue	1	1
60	Structural Concrete Repairs Discharge Channel	$1,750,950	Contractor TBD	0.00%	7/6/2020	1/7/2021	On Track	0	1
61	Generator Inspection and Repairs	$0	PREPA, Contractor TBD	3.00%	5/16/2020	8/12/2020	Delayed	1	14
62	Turbine Inspection and Repairs	$0	PREPA, Contractor TBD	17.00%	5/4/2020	8/11/2020	Delayed	1	27

Overarching Workstream Initiatives

- Eng. & Technical Studies
- U5 Structural Repairs
- Condensate Water Tank Repairs
- Aux. Equipment Repairs
- Civil & Other Reconstruction
- Emergency Declaration
- Asbestos Removal & Disposing
- Lead Removal Works
- Boiler Unit 5 Works
- Unit 5 Startup and Commissioning
- Operational Test & Control Tasks
- MPT Test and Repair Dikes
- Turbine Inspection & Repairs
- Generator Inspection & Repairs
- Other Works

Unit 5 Project Summary by Workstream (Cont'd)

ID	Workstream Description	Est. Cost	Resources Assigned	% Complete	Scheduled Start	Scheduled Finish	Status	Tasks Completed	Tasks Pending
63	Electrical Conservation Works	$0	PREPA	29.00%	5/12/2020	7/2/2020	On Track	2	3
64	Emergency Declaration	$0	PREPA	100.00%	3/23/2020	3/23/2020	Completed	1	0
65	Scaffolding & Others	$531,186	Brand, ALL Contractors & Services Corp, Abacus	0.00%	1/7/2020	8/4/2020	On Track	0	1
	Total	**$25,184,292**							

Overarching Workstream Initiatives

- Eng. & Technical Studies
- U5 Structural Repairs
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- Aux. Equipment Repairs
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- Lead Removal Works
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- Turbine Inspection & Repairs
- Generator Inspection & Repairs
- Other Works

Unit 5 Procurement Plan - Pipeline

The following table outlines the procurements currently in the pipeline to support the Costa Sur U5 Assessment and Repairs project:

Procurement Description	Procurement Type	Est. Amount	Status	Target Date	Update
Natural Gas Line Pipe Structural Repair Works	Emergency Procurement	$908,000	Proponent Selected	5/28/2020	▪ Proponent has been selected and is currently working on gathering all contract requirements for signature
Structural Concrete Repairs to Outfall channel structure, ending segment	Emergency Procurement	$1,750,950	Planning Stage	TBD	▪ Waiting for Geotechnical Results so PREPA may commenced with the design process
Temporary Laboratory Offices (Rental - 12 Months)	Emergency Procurement	$140,000	Evaluating RFP Responses	TBD	▪ RFP has been published several times with limited responses from the marketplace
Turbine-Generator Inspection Work	Emergency Procurement	$1,200,000	Published in Power Advocate	TBD	▪ RFP will be executed to have a “plan B” in case there is an issue with this equipment during TA Inspection Phase
Temporary Mobile Water Treatment Plant	Emergency Procurement	$745,000	Published in Power Advocate	TBD	▪ RFP will be executed to have a “plan B” in case there is an issue with the delivery of the new Multimedia Filters to the Existing Water Treatment Plant
	Estimated Total	**$4,743,950**			

Unit 5 Procurement Plan - Awarded

The following table outlines the procurements awarded with new or existing contracts to support Costa Sur Assessment & Repairs:

#	Procurement Description	Procurement Type*	Cost	Associated Workstream #	Contract #	Contractor Name
1.	Exterior mechanical inspection of the condition of the boilers	Service Upon Request Agreement	$83,170	1	83998	CARIBE GE INTERNATIONAL ENERGY
2.	Interior mechanical inspection of the condition of the boilers Units 5 and 6	Service Upon Request Agreement	$66,030	7	83998	CARIBE GE INTERNATIONAL ENERGY
3.	Preliminary Visual Inspection of Steam Piping and Equipment and Structural Supports.	Service Upon Request Agreement	$22,540	3	84002	CARIBE GE INTERNATIONAL ENERGY
4.	Preliminary Inspection and Steel Structural Elements for Boilers and Auxiliary Equipment (units 3-4)	Service Upon Request Agreement	$39,100	2	84002	CARIBE GE INTERNATIONAL ENERGY
5.	Preliminary Inspection and Steel Structural Elements for Boilers and Auxiliary Equipment (units 5-6)	Service Upon Request Agreement		2	84002	CARIBE GE INTERNATIONAL ENERGY
6.	Structural Elements Immediate Repair Work to Allow Additional Interior Inspection of the Boilers and Other Equipment	Service Upon Request Agreement	$86,941	5	82470	ENERSYS ENGINEERING CORP
7.	More Detail Inspection, Structural Design Work for Repairs Units 5 and 6 (Before Put On Service). Also, Structural Assessment Structures Units 1 and 2	Service Upon Request Agreement	$298,635	2	84002	CARIBE GE INTERNATIONAL ENERGY
8.	Structural Repairs Cross Bracings Structure - Overhead Crane 1-6	Service Upon Request Agreement	$78,492	25	82470	ENERSYS ENGINEERING CORP
9.	Structural Repair Works (Temporary Connection) Condensate Water Tanks	Service Upon Request Agreement	$220,800	20	82470	ENERSYS ENGINEERING CORP
10.	Insulation Repair Works in Boiler 5	Service Upon Request Agreement	$700,000	37	86283	J R INDUSTRIAL CONTRACTORS INC
11.	Old Water Condensate Tanks Interconnection Works to Unit 5 Demin Water Cycle System	Service Upon Request Agreement	$840,000	24	82470	ENERSYS ENGINEERING CORP

** Note: Service Upon Request Agreements refers to agreements that PREPA has in place to be used in the event that a need arises from one of the plants within the specified scope. Cost associated with these contracts are only a fraction of the total contract amount.*

Unit 5 Procurement Plan – Awarded (Cont'd)

The following table outlines the procurements awarded with new or existing contracts to support Costa Sur Assessment & Repairs:

#	Procurement Description	Procurement Type*	Cost	Associated Workstream #	Contract #	Contractor Name
12.	Scaffolding Services	Service Upon Request Agreement	$495,000	-	84611	BRAND ENERGY INFRASTRUCTURE
13.	Repair Works on Line Valves Unit 5	Service Upon Request Agreement	$49,230	33	83581	ENGINEERING SYSTEMS SALES
14.	Cargo Elevators Repairs	Service Upon Request Agreement	$60,000	41	82412	VERTECH INC
15.	Integration of Raw Water Pumps Controls into DCS Foxboro	Service Upon Request Agreement	$143,605	43	85590	LT AUTOMATION
16.	Integration of Metering Station into DCS	Service Upon Request Agreement	$64,945	43	83009	LT AUTOMATION
17.	Opacity Meter Upgrade	Service Upon Request Agreement	$66,971	43	83994	LT AUTOMATION
18.	Foxboro Controls Advantage Upgrade	Service Upon Request Agreement	$106,511	43	82159	LT AUTOMATION
19.	Costa Sur Tanks Structural Analysis	Request for Quotes (RFQs)	$134,448	6	85840	Heinsen Global Engineering (HGE)
20.	Geotechnical Studies	Request for Quotes (RFQs)	$349,046	10	86125	Earth Engineers, Inc.
21.	Reconstruction Structural Steel Repairs	Request for Quotes (RFQs)	$4,000,000	13-17	86331	ALSTOM CARIBE INC
22.	Design Work – Structural Repair Condensate Tanks	Request for Quotes (RFQs)	$146,662	22	86344	HGE,PSC

** Note: Service Upon Request Agreements refers to agreements that PREPA has in place to be used in the event that a need arises from one of the plants within the specified scope. Cost associated with these contracts are only a fraction of the total contract amount.*

Unit 5 Procurement Plan – Awarded (Cont'd)

The following table outlines the procurements awarded with new or existing contracts to support Costa Sur Assessment & Repairs:

#	Procurement Description	Procurement Type*	Cost	Associated Workstream #	Contract #	Contractor Name
23.	Underwater Visual Inspection of the Tunnels Condenser 5 and 6	Emergency Procurement	$83,100	9	86495	MARINE DIVING CONTRACTORS
24.	Structural Repairs Condensate Tank 5	Emergency Procurement	$309,468	22	86704	R G ENGINEERING INC
25.	Lead Removal and Disposal Works - Structural Repairs Units 1-6	Emergency Procurement	$1,111,843	12	86566	J R INDUSTRIAL CONTRACTORS INC
26.	Asbestos Removal & Disposal Works Unit 5	Emergency Procurement	$199,000	-	86559	Caribe Hydroblasting
27.	NDT Services Unit 5	Emergency Procurement	$250,000	32	86678	ALONSO CARUS IRON WORKS INC
28.	Civil Works Control Room 5-6, Compressor Room, Shift Engineer Room	Emergency Procurement	$328,215	26-29	86653	ALL CONTRACTORS SERVICES CORP
29.	Condensate Recirculating Discharge Pipe (12 ft diameter)	Emergency Procurement	$900,000	39	86664	MALNAT ASOCIADOS
30.	MPT 4, 5 and 6 Secondary Containment Repair Works	Emergency Procurement	$85,812	48,57-58	86581	5 SENSES SOLUTIONS LLC.
31.	Removal and Mitigation of Contaminated Soil Switchyard 115 kV	Emergency Procurement	$20,000	59	86716	5 SENSES SOLUTIONS LLC.
32.	Temporary Administrative Offices (Rental - 12 Months)	Emergency Procurement	$182,475	54	86552	ALL CONTRACTORS SERVICES CORP
33.	Boiler Wash	-	$1,000,000	19	85153	INDUCHEM SERVICES
34.	Superheater-Desuperheat Crossover Link Piping Installation U. 5	-	$1,766,429	30	86214	ALSTOM CARIBE INC

** Note: Service Upon Request Agreements refers to agreements that PREPA has in place to be used in the event that a need arises from one of the plants within the specified scope. Cost associated with these contracts are only a fraction of the total contract amount.*

Unit 5 Procurement Plan – Awarded (Cont'd)

The following table outlines the procurements awarded with new or existing contracts to support Costa Sur Assessment & Repairs:

#	Procurement Description	Procurement Type*	Cost	Associated Workstream #	Contract #	Contractor Name
35.	Condition Survey and Testing for Concrete Pedestals for Power Turbine and Generator Units , 5 and 6	-	$55,160	8	85980	Heinsen Global Engineering (HGE)
36.	January 8,2020 - Safety Inspection	-	$3,031	-	85336	ABACUS ARCHITECTURE PSC
37.	Overhead Crane Installation and Commissioning	-	TBD	36	82717	MASTER LINK CORPORATION
38.	Integration of Demineralizer Controls into DCS	-	TBD	43	84651	LT AUTOMATION
39.	Costa Sur Water Tunnels for Condensers Units 5 and 6 Inspection	-	TBD	-	86114	ALSTOM CARIBE INC
40.	Existing Overhead Crane Units 3 and 6, Certification	-	$34,412	25	84013	Vital Energy
41.	Foxboro Maintenance	-	TBD	43	84651	LT AUTOMATION
42.	Natural Gas System Activities	-	$78,325	47	86814	ALL CONTRACTORS SERVICES CORP
43.	Lead Paint and Asbestos Sampling Analysis	-	$6,425	12,12A	79564	Environmental Health & Safety Services
44.	Turbine Water Induction	-	TBD	43	80475	LT AUTOMATION
		Estimated Total	**$14,381,073**			

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Report Submitted as of May 29, 2020

Emergency Management KPI Dashboard

DEMAND (MW)

2174

AS OF MAY 28, 2020

CUSTOMERS ENERGIZED

99.64%

1,462,900

Progress of Critical Generation System					
Power Plant	Unit	Power Plant Type	Installed Generation (MW)	Maximum Capacity (MW)	Actual Generation (MW)
San Juan	9	Base Load	100	90	80
Palo Seco	1	Base Load	85	70	63
Palo Seco	3	Base Load	216	140	130
Palo Seco	4	Base Load	216	145	130
Aguirre	2	Base Load	450	450	280
Aguirre CC	Stag 1	Base Load	296	195	125
Aguirre CC	Steam 1	Base Load	96	39	39
Aguirre CC	Stag 2	Base Load	296	140	0
San Juan CC	CT 5	Base Load	220	160	120
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San Juan CC	6	Base Load	220	160	120
Cambalache	2	Peaker	82.5	77	0
Cambalache	3	Peaker	82.5	77	0
Daguao	1-1	Peaker	18	18	0
Daguao	1-2	Peaker	21	16	0
Aguirre Hidrogas	2-2	Peaker	21	21	0
Palo Seco Hidrogas	1-1	Peaker	21	21	19
Palo Seco Hidrogas	2-1	Peaker	21	21	21
Palo Seco Megagens	1, 2, 3	Peaker	66	66	20
Jobos	1-1	Peaker	21	19	0
Jobos	1-2	Peaker	21	18	0
Mayaguez	1	Peaker	55	50	0
Mayaguez	3	Peaker	55	25	0
Yabucoa	1-1	Peaker	21	20	0
Vega Baja	1-2	Peaker	21	19	0
Hidroeléctricas		Peaker	23	23	15
AES	1	Base Load	262	225	223
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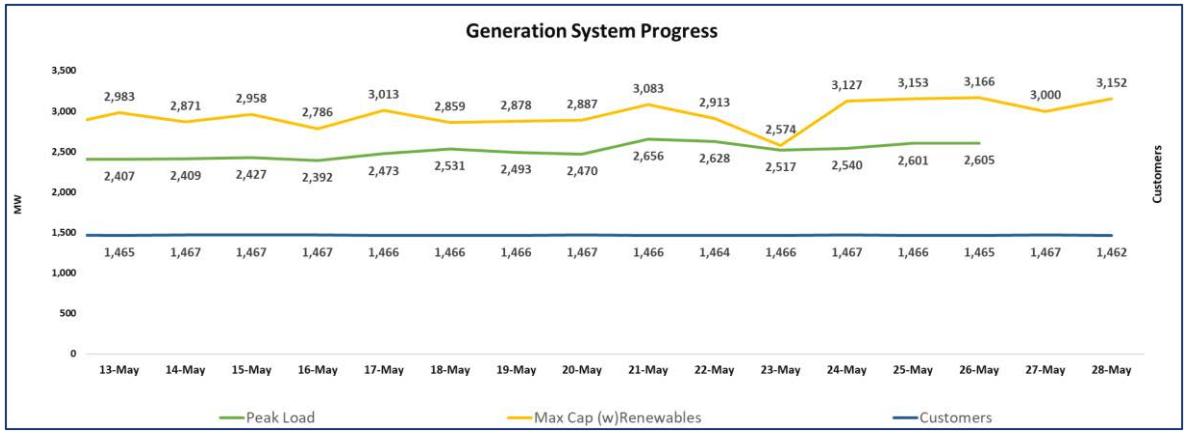
Sub - Total			3860	3117	2139
Renewables		Renewables	194	35	35
Total			4054	3152	2174

Generation Units Out of Service					
Power Plant	Unit	Power Plant Type	Installed Generation (MW)	Maximum Capacity (MW)	Expected date to be online*
Costa Sur	5	Base Load	410	410	August 14, 2020
Costa Sur	6	Base Load	410	410	TBD
Aguirre CC	Steam 2	Base Load	96	50	TBD
San Juan	7	Base Load	100	71	TBD
San Juan	8	Base Load	100	50	TBD
Aguirre	1	Base Load	450	450	June 4, 2020
San Juan CC	STG 6	Base Load	60	60	July 31, 2020
Aguirre CC	Stag 2 (2-2)	Peaker	50	50	June 19, 2020
Costa Sur Hidrogas	1-1	Peaker	21	21	TBD
Costa Sur Hidrogas	1-2	Peaker	21	21	TBD
Aguirre Hidrogas	2-1	Peaker	21	21	TBD
Palo Seco Hidrogas	1-2	Peaker	21	19	June 12, 2020
Mayaguez	2	Peaker	55	55	June 5, 2020
Mayaguez	4	Peaker	55	50	May 31, 2020
Yabucoa	1-2	Peaker	21	20	June 2, 2020
Vega Baja	1-1	Peaker	21	18	May 29, 2020
Sub-Total			1912	1776	
Cambalache	1	Peaker	83		Long Term Outage
Palo Seco Hidrogas	2-2	Peaker	21		Long Term Outage
Palo Seco Hidrogas	3-1	Peaker	21		Long Term Outage
Palo Seco Hidrogas	3-2	Peaker	21		Long Term Outage
Palo Seco	2	Base Load	85		Long Term Outage
San Juan Steam	10	Base Load	100		Long Term Outage
Sub-Total			331	0	
Total			2243	1776	

*The dates are as of current information and system conditions, which may vary or change with unexpected events in the electrical system operation.



Project Team and Roles and Responsibilities Matrix

Project Team Members include a diverse representation from different areas of the organization such as Generation, PMO, DFMO, and key advisors .

Team Grouping	Key Roles and Responsibilities
Executive Team	▪ Establish governance, provide direction and oversight to broader project team ▪ Assign resources, resolve conflicts and risks, and approve execution plan ▪ Manage stakeholder communications and engagement
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Procurement Team	▪ Manage the procurement of goods and services needed to support the Execution Team ▪ Provide regular status updates on all procurements ▪ Escalate issues, risks, and/or concerns as needed
Execution Team	▪ Manage the project scope, budget, and schedule ▪ Engage regularly with controls team to provide timely and accurate update on execution ▪ Manage contractors/vendors supporting the project
Controls Team	▪ Collect data and information related to the project scope, budget, and schedule ▪ Develop and maintain master project schedule ▪ Provide project information and progress to the Reporting Team
Reporting Team	▪ Develop standard project status progress reports ▪ Manage stakeholder needs and request for communications
PREB/FOMB Interface Team	▪ Identify stakeholder engagement and communication needs ▪ Communicate with Management and Executive Team on stakeholder requests ▪ Review all communications issued to the stakeholder group ▪ Provide interface support with stakeholder groups
FEMA Interface Team	▪ Identify stakeholder engagement and communication needs ▪ Communicate with Management and Executive Team on stakeholder requests ▪ Review all communications issued to the stakeholder group ▪ Provide support to secure funding and any associated documentation ▪ Provide interface support with FEMA

Exhibit B

Available for review at https://diazvaz-my.sharepoint.com/:f:/g/personal/kbolanos_diazvaz_law/ElZzqe7R2jRIpe81xi7W6oIBA7p8_rSuSW0429mbxgvc0Q?e=IMJ8F8

Exhibit C

Costa Sur Unit 6 Damage Assessment and Repairs Progress Status
May 29, 2020

Puerto Rico
Electric Power
Authority

Puerto Rico Electric Power Authority (PREPA)

Costa Sur Unit 6 Damage Assessment and Repairs
Progress Status Report
May 29, 2020

Introduction and Outline

Introduction

- PREPA is currently assessing the extent of the damages suffered in the Costa Sur power plant facility
- The goal, if achievable, is to repair the most critical elements of the plant and place Unit 6 in commercial operations
- This report outlines PREPA's progress in its assessment, repairs, and procurement activities related to Costa Sur Unit 6

Report Outline **Page #**

Unit 6 Update

On May 22, 2020 the Puerto Rico Energy Bureau (PREB) issued a resolution approving the repairs of Costa Sur's Unit 6. The resolution included:

- A total combined budget of $40.2M for repairs associated with both units
- Reporting requirements outlining the progress of the assessment and repair activities
  - Reports are due the 15th and 30th of each month according to approved order

PREPA's Management Team is working diligently to identify the full scope and resources needed to repair Costa Sur Unit 6

- The goal is to identify all the workstreams associated with the repairs, develop a budget baseline based on the full scope, and identify the procurement needs to support the execution
- Although a balance of $15M is available for Unit 6 repairs, PREPA has not yet develop a baseline of the projected cost to repair Unit 6
- Critical path items have already been identified and include:
  - Turbine rotors replacement
  - Condensate tank replacement
  - Desuperheater link piping installation
  - Boiler structure repair
  - Condenser mechanical cleaning
  - Pipe type cable repair
  - Overhead crane rails replacement
  - Generator inspection and hydrogen seals replacement

Unit 6 Next Steps

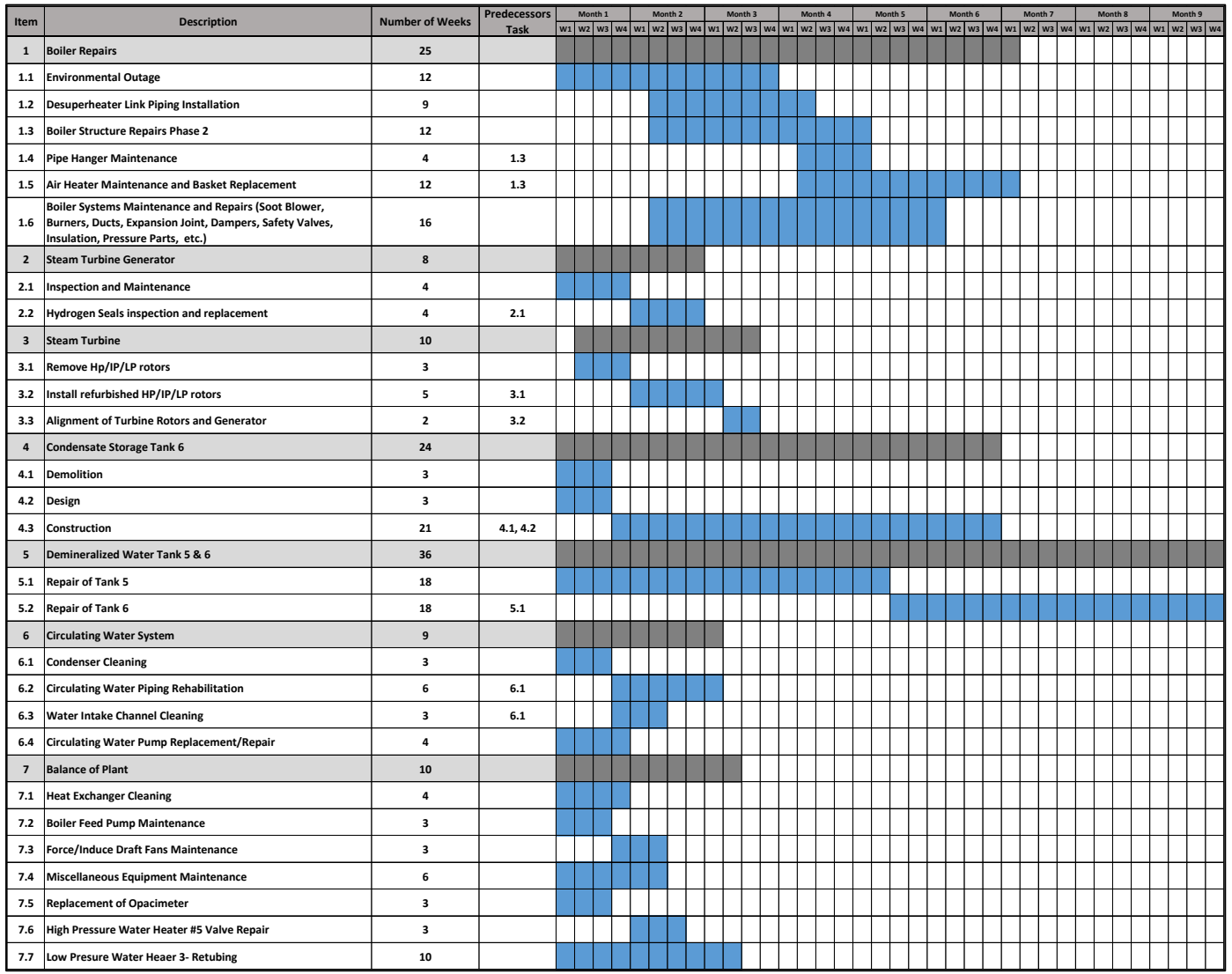
Milestone schedule for Unit 6 repairs has been developed. Next Steps include:

- Develop a detailed scheduled
- Develop budget baseline based on schedule and full scope
- Baseline project schedule
- Identify procurement needs and determine procurement strategy
- Review project plan with key stakeholders; incorporate feedback as needed
- Initiate execution activities

(*Note: some execution activities could be executed in parallel with the development of the project schedule and budget baseline*)

High-Level Milestone Schedule

Item	Description	Number of Weeks	Predecessors Task
1	Boiler Repairs	25	
1.1	Environmental Outage	12	
1.2	Desuperheater Link Piping Installation	9	
1.3	Boiler Structure Repairs Phase 2	12	
1.4	Pipe Hanger Maintenance	4	1.3
1.5	Air Heater Maintenance and Basket Replacement	12	1.3
1.6	Boiler Systems Maintenance and Repairs (Soot Blower, Burners, Ducts, Expansion Joint, Dampers, Safety Valves, Insulation, Pressure Parts, etc.)	16	
2	Steam Turbine Generator	8	
2.1	Inspection and Maintenance	4	
2.2	Hydrogen Seals inspection and replacement	4	2.1
3	Steam Turbine	10	
3.1	Remove Hp/IP/LP rotors	3	
3.2	Install refurbished HP/IP/LP rotors	5	3.1
3.3	Alignment of Turbine Rotors and Generator	2	3.2
4	Condensate Storage Tank 6	24	
4.1	Demolition	3	
4.2	Design	3	
4.3	Construction	21	4.1, 4.2
5	Demineralized Water Tank 5 & 6	36	
5.1	Repair of Tank 5	18	
5.2	Repair of Tank 6	18	5.1
6	Circulating Water System	9	
6.1	Condenser Cleaning	3	
6.2	Circulating Water Piping Rehabilitation	6	6.1
6.3	Water Intake Channel Cleaning	3	6.1
6.4	Circulating Water Pump Replacement/Repair	4	
7	Balance of Plant	10	
7.1	Heat Exchanger Cleaning	4	
7.2	Boiler Feed Pump Maintenance	3	
7.3	Force/Induce Draft Fans Maintenance	3	
7.4	Miscellaneous Equipment Maintenance	6	
7.5	Replacement of Opacimeter	3	
7.6	High Pressure Water Heater #5 Valve Repair	3	
7.7	Low Presure Water Heaer 3- Retubing	10	



Report Submitted as of May 29, 2020

Unit 6 Executive Summary

0.0%	0.0%
% Completion	Time Elapsed

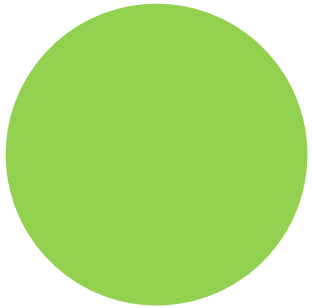
Management Notes:

- Received PREB resolution approving the repairs of Costa Sur Unit 6 on 5/22/2020
- PREPA's Governing Board resolution 4800 secured authorization for the Management to begin repair work on Unit CS-6 of the Costa Sur Power Plant
- Commenced activities to develop detailed schedule and baseline budget
- Critical path items have been identified

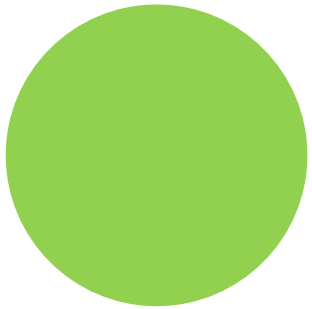
Scope and Metrics by Workstream

TBD	0	0
Identified Workstreams	Workstreams at 100% Completion	Workstreams Added *(Since Last Report)*

Budget



Schedule



** Note: Budget baseline to be develop for next reporting cycle; PREPA will measure its overall budget performance against the $40.2M approved for both units*

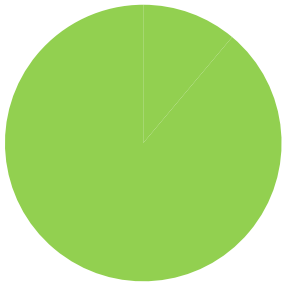
Financials

Budget Baseline	TBD*

$0	$0
Total YTD Disbursements	Total YTD Amount Invoiced

$0
Balance Available *(Based on Invoices)*

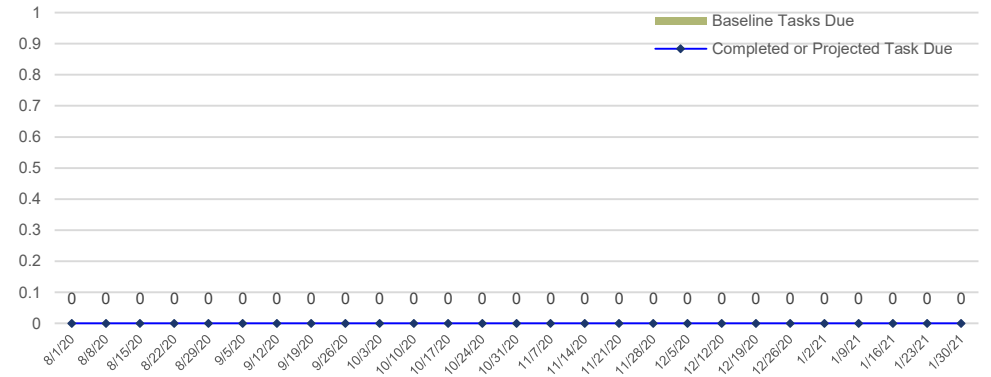
Procurement Status



0.0%
% Procurements Completed

0	TBD	$0.0M
Total Procurements	Emergency Procurements	Amount Contracts Awarded

Schedule Work Breakdown



Schedule Metrics

TBD	0	0
Total Scheduled Tasks	Pending Tasks On-Track	Tasks Due This Week
0	0	0
YTD Tasks Completed	Pending Tasks Delayed	Tasks Due Next Week
	0	0
	Pending Tasks Overdue	Tasks Due in June

Avg. Weekly Headcount (*Assigned to U5 Repairs*)

TBD	TBD
PREPA's Avg. Headcount	**Avg. Total Headcount**
TBD	
Contractor's Avg. Headcount	

Report Submitted as of May 29, 2020

Emergency Management KPI Dashboard

DEMAND (MW)

2174

AS OF MAY 28, 2020

CUSTOMERS ENERGIZED

99.64%

1,462,900

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Aguirre CC	Stag 1	Base Load	296	195	125
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Sub - Total			3860	3117	2139
Renewables		Renewables	194	35	35
Total			4054	3152	2174

Generation Units Out of Service					
Power Plant	Unit	Power Plant Type	Installed Generation (MW)	Maximum Capacity (MW)	Expected date to be online*
Costa Sur	5	Base Load	410	410	August 14, 2020
Costa Sur	6	Base Load	410	410	TBD
Aguirre CC	Steam 2	Base Load	96	50	TBD
San Juan	7	Base Load	100	71	TBD
San Juan	8	Base Load	100	50	TBD
Aguirre	1	Base Load	450	450	June 4, 2020
San Juan CC	STG 6	Base Load	60	60	July 31, 2020
Aguirre CC	Stag 2 (2-2)	Peaker	50	50	June 19, 2020
Costa Sur Hidrogas	1-1	Peaker	21	21	TBD
Costa Sur Hidrogas	1-2	Peaker	21	21	TBD
Aguirre Hidrogas	2-1	Peaker	21	21	TBD
Palo Seco Hidrogas	1-2	Peaker	21	19	June 12, 2020
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Mayaguez	4	Peaker	55	50	May 31, 2020
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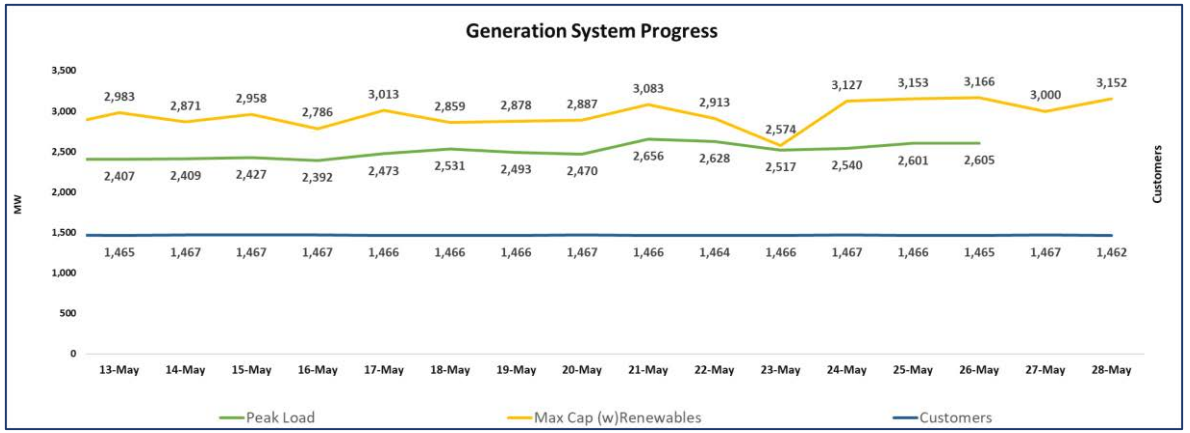

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Exhibit D

Costa Sur Power Plant Earthquake Inspection Report for Unit Boiler and High-Energy Piping

GENERAL INSTRUCTIONS: Use this form to complete your inspection report of earthquake damages to the Costa Sur power plant. This report is critical and will be used for insurance and FEMA claims so it is important that you are clear in the description of the damages with detailed photographs. Also provide recommendations to fix the problem and indicate if these repairs are needed to bring the unit back in service without risking the **SAFETY** of plant personnel and equipment.

COSTA SUR POWER PLANT EARTHQUAKE INSPECTION REPORT	
Prepared by:	
Company:	
Site visit date(s):	January 8 - 9, 2020
Site inspector(s):	

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
No.	**Component / Equipment** Boiler structures Turbine and associated structures Piping, major equipment foundations, etc. Building structures, warehouse, control room, etc. Fuel tanks, gas pipelines, water pipes, etc.	**Location** [Provide approximate location within the power plant so it can be easily located by others]	**Detailed Damage Description** [Provide a clear detailed description of the damage and impact the damage could have on other structures or critical production equipment. For example a damaged structure that supports a critical pump or a crane, etc.]	**Dimensions of described damage if available** If the damage is a wall, foundation, road, pipe, provide dimensions. Also provide length and width of cracks on walls, structures, etc.	**Recommendation for repair** [Provide a detailed repair recommendation in regards to WHAT is need and HOW the fix is to be implemented]	**Timeline** Provide and estimated time in **DAYS** to implement the recommended fix	**Budget** Provide an estimate to implement the recommended fix within the estimated schedule	**Classification** [Please indicate] [1] Must be repaired due to RISK exposure to personnal safety and/or equipment damage [2] Minimu RISK to personnel safety and or equipmen damage [3] Can be repaired while the plant is operating	**Photo #** [Provide pictures in a separate document numbered to cross reference with this report]
1									
2									
3									
4									
5									
6									
7									
8									
9									

COSTA SUR POWER PLANT EARTHQUACKE INSPECTION REPORT FOR UNIT 6 BOILER AND HIGH-ENERGY PIPING

Prepared by:	Tim Heyne
Company:	FieldCore - a GE company
Site visit date(s)	January 8 - 11, 16 - 22, and 28, 2020
Site Inspector(s) (Ground Floor of Boiler only):	Tim Heyne, Fernando Rivera, Carlos Bermudez, Jaime Umpierre, Maria Carmen Rivera, and Felipe Mazzini
Site Inspector(s):	Tim Heyne, Walberto Maldonado, Angel Cintron, William Schlumpf, and Larry Loziuk

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
No.	**Component / Equipment:** Boiler structures Turbine and associated structures Piping, major equipment foundations, etc. Building structures, warehouse, control room, etc. Fuel tanks, gas pipelines, water pipes, etc.	**Location** [Provide approximate location within the power plant so it can be easily located by others]	**Detailed Damage Description** [Provide a clear detailed description of the damage and impact the damage could have on other structures or critical production equipment. For example a damaged structure that supports a critical pump or a crane, etc.]	**Dimensions of described damage if available** If the damage is a wall, foundation, road, pipe, provide dimensions. Also provide length and width of cracks on walls, structures, etc.	**Recommendation for repair** [Provide a detailed repair recommendation in regards to WHAT is need and HOW the fix is to be implemented]	**Timeline** Provide and estimated time in **DAYS** to implement the recommended fix	**Budget** Provide an estimate to implement the recommended fix within the estimated schedule	**Classification** [Please indicate] [1] Must be repaired due to RISK exposure to personnel safety and/or equipment damage [2] Minimum RISK to personnel safety and or equipment damage [3] Can be repaired while the plant is operating	**Photo #** [Provide pictures in a separate document numbered to cross reference with this report]
1	Main Steam Chest	Turbine deck	Failure of the connection between the control valve actuators enclosure (CVAE) and the valve chest. Threaded portions of the two bolts that failed are still in the valve chest.	Two non-standard bolts: 1½" x 8 threads/inch Each bolt requires one lock plate. The length and the material of the bolts are not specified in the instruction manual. Qty. 2 of GE part nos. 129 and 130 per Fig. 8-7 (reference drawing 712E733 (rev. B) in the Canadian GE Instruction Manual, SGE1-3039, Volume 1.	The threaded portions of the bolts remaining in the valve chest need to be removed. It would be necessary to completely disconnect and separate the CVAE from the valve chest to provide access to the valve chest and extract the failed bolts. The failed bolts may be extracted by one of two methods. One, weld a rod to each failed bolt and unscrew the bolts. Two, drill out the bolts and retap the holes. The internal parts of the CVAE should be inspected and/or tested. Consider using the services of the OEM to assess the condition of the control mechanisms in the CVAE.			1	1-1 through 1-9
2	High-Pressure Feedwater Heater Structural Steel	Adjacent to Feedwater Heater No. 7 at turbine deck elevation	East-west horizontal beam at the turbine deck elevation on the south side of the high-pressure feedwater heaters is bent in the north-south direction and appears slightly twisted.	Need PREPA drawings or to take measurements. Would need scaffolding or other safety equipment to take measurements.	Need an assessment and recommendations from a structural engineer.			1	2-1, 2-2
3	High-Pressure Feedwater Heater Structural Steel	West side of Feedwater Heater No. 7 below turbine deck elevation	Diagonal brace connection to connection plate appears to have failed.	Need to review PREPA drawings or take measurements of the angles that remain. Would need scaffolding or other safety equipment to take measurements.	Need to visually inspection connection. Would need ladder or safety rope, lanyard, and harness to access connection.			1	3-1, 3-2
4	Turbine Deck Platform Steel	Near south-west corner of Feedwater Heater No. 7	Weld connection between turbine deck platform steel and high-pressure feedwater heater structural steel has failed.	Approximately 6" long weld between an angle connection and the high-pressure feedwater heater structural steel.	Depends on recommendation from Item 2. If east-west horizontal I-beam on the south side of the high-pressure feedwater heaters is re-used then re-align connection angle and weld to each I-beam.			2 and 3	4-1, 4-2, 4-3
5	High-Pressure Feedwater Heater Structural Steel	West side of Feedwater Heater No. 7 at turbine deck elevation	The flange of the I-beam has been cut, approx. 2' long or 20% of the length of the I-beam.	Need to review PREPA drawings or take measurements of I-beam. Would need scaffolding or other safety equipment to take measurements.	Reinforce I-beam. Install plate over the cut flange. Weld entire perimeter of plate to the existing flange. Length of plate should be approx. 3'. Width and thickness to be determine later.			2 and 3	5-1, 5-2, 5-3
6	Feedwater Heater No. 7 Bracing	Four locations just below turbine deck	Each of the four upper braces for Feedwater Heater No. 7 has failed.	Need to review PREPA drawings or take measurements of the angles that remain. Would need scaffolding or other safety equipment to take measurements.	Remove the insulation in the area of the failed angles at the heater. If the failure is in the shell of the heater then perform magnetic particle tests. If cracks are found then consult with PREPA Life Extension Dept. for procedures to remove cracks. If no cracks then prepare surface for installing new angle.			1	6-1 through 6-7
7	High-Pressure Feedwater Heater Structural Steel	Between Feedwater Heater Nos. 6 and 7 below turbine deck elevation	The connection at the south-west end of the horizontal diagonal angle appears to have failed at the connection plate.	Need to review PREPA drawings or take measurements of the angles that remain. Would need scaffolding or other safety equipment to take measurements.	Need to visually inspect connection at each end of the brace. Would need ladder or safety rope, lanyard, and harness to access connection.			1	7-1, 7-2, 7-3
8	Feedwater Heater No. 6 Bracing	Three locations just below turbine deck	Three of the four upper braces for Feedwater Heater No. 6 have buckled or failed.	Need to review PREPA drawings or take measurements of the angles that remain. Would need scaffolding or other safety equipment to take measurements.	Replace the failed and buckled angles.			1	8-1, 8-2, 8-3, 8-4, 8-5
9	High-Pressure Feedwater Heater Structural Steel	Ground floor below Feedwater Heater No. 7	Several anchor bolts for the structural steel columns have been pulled up ½" to 1". At least one anchor bolt has failed. The failed anchor bolt is located on the north side of the south-east column. Most of the grouting and concrete underneath the structural steel columns are cracked.		Need an assessment and recommendations from a civil engineer.			1	9-1 through 9-8
10	Feedwater Heater No. 7	Base of Feedwater Heater No. 7	The feedwater heater rocked about the axis of its supports. The base of the feedwater heater is insulated and not visible for inspection.	The base of the feedwater heater is insulated and not visible for inspection.	Remove the insulation around the base of the feedwater heater. Visually inspect the shell of the heater for buckling and for cracks at the support lug attachment welds. Consider using magnetic particle tests to examine the welds.			1	10-1, 10-2, 10-3, 10-4, 10-5
11	Feedwater Heater No. 7 Instrument	South-east side of the heater	Cover of transmitter not secured over transmitter.		Transmitter needs to be inspected and tested. If it is not functioning properly then it should be replaced.			1	11-1, 11-2
12	High-Pressure Feedwater Heater Structural Steel	Ground floor below Feedwater Heater No. 6	Several anchor bolts for the structural steel columns have been pulled up ¼" to ½". Most of the grouting and concrete underneath the structural steel columns are cracked.		Need an assessment and recommendations from a civil engineer.			1	12-1 through 12-6
13	Feedwater Heater No. 6	Base of Feedwater Heater No. 6	The feedwater heater rocked about the axis of its supports. The base of the feedwater heater is insulated and not visible for inspection.	The base of the feedwater heater is insulated and not visible for inspection.	Remove the insulation around the base of the feedwater heater. Visually inspect the shell of the heater for buckling and for cracks at the support lug attachment welds. Consider using magnetic particle tests to examine the welds.			1	13-1, 13-2, 13-3
14	Main Steam Pipe 6-1, Snubber	At entrance to equipment building	Failed WEAR Restraint eye and I-beam. Risk of damage to MS pipe supports and added stress of MS pipe during major wind or seismic event.	One WEAR Restraint: Part No. WR-24-1.5 One column: W 8 x 31, 13'-0" long, ASTM A-992 material	Repair or replace WEAR Restraint and column. Would need to install scaffolding to access WEAR Restraint. Island Structures Engineering will provide recommendations for repairing WEAR Restraint. Consider re-painting all WEAR Restraints before returning unit to service. Cracked paint would indicate movement. Assess condition of the MS Pipe welds below the Tee at the U-balancing pipe upstream of the stop valves. Perform visual test, magnetic particle tests, and ultrasonic tests.			2	14-1, 14-2
15	Main Steam Pipe 6-2, Snubber	At entrance to equipment building	Failed WEAR Restraint rod and I-beam. Risk of damage to MS pipe supports and added stress of MS pipe during major wind or seismic	One WEAR Restraint: Part No. WR-24-1.5	Repair or replace WEAR Restraint and I-beam. Would need to install scaffolding to access WEAR Restraint. Island Structures Engineering will provide recommendations for repairing WEAR Restraint. Consider re-painting all WEAR Restraints before returning unit to service. Cracked			2	15-1, 15-2, 15-3

15	Main Steam Pipe 6-2, Shutoff	At entrance to equipment building	supports and added stress of MS pipe during major wind or seismic event.	One I-beam: WF 8x24, approx. 8'-7½" long, ASTM A-992 material	planning all WEAR restraints before returning unit to service. Cracked paint would indicate movement. Assess condition of the MS Pipe welds below the Tee at the U-balancing pipe upstream of the stop valves. Perform visual test, magnetic particle tests, and ultrasonic tests.			2	15-1, 15-2, 15-3
16	Main Steam Pipe 6-1	At the grating platform for the safety valve	Slight damage to lagging.	Not enough damage to require repairs.	Consider assessing the condition of MS pipe connections to Header SH-8 and condition of Header SH-8 supports. A minimumal assessments would be visual tests and hydrostatic pressure tests. Also, consider performing magnetic particle tests and ultrasonic tests. It would be necessary to enter the vestibule to perform most of these assessments.			2	16-1, 16-2
17	Main Steam Pipe 6-2	At the grating platform for the safety valve	Missing insulation and damage to lagging.	One linear foot of lagging is buckled and an estimated 3 to 4 linear feet of insulation is missing.	Replace missing insulation and damaged lagging. Recommend Johns Manville Thermo-1200 insulation, 6" to 9" thick. Cover insulation with jacketing. Recommend corrugated aluminum jacketing, 0.20" thick. MS pipe OD is 17". Design operating temperature is 1005°F. There is a risk of thermal shock to the MS pipe if the insulation is not replaced. Consider assessing the condition of MS pipe connections to Header SH-8 and condition of Header SH-8 supports. A minimumal assessments would be visual tests and hydrostatic pressure tests. Also, consider performing magnetic particle tests and ultrasonic tests. It would be necessary to enter the vestibule to perform most of these assessments.			2	17-1, 17-2
18	Deaerator Structural Steel	Truss elevation below the deaerator platform in the middle bay	The first two I-beams in the north-south direction are buckled, the middle I-beam in the east-west direction is buckled, and the diagonal back-to-back angles are deflected. The middle I-beam in the east-west direction supports the boiler feedwater pump suction pipe.	Need to review PREPA drawings and the remedial drawings issued with the Sigma structural steel assessment report in 2013.	Sigma issued recommendations in 2013 to replace the failed members and to reset the pipe supports. A licensed structural engineer should re-assess the condition of the structural members. It would be necessary to provide temporary support for the boiler feedwater pump suction pipes when replacing these structural members.			1	18-1 through 18-6
19	Deaerator Structural Steel	Between Columns C-27.00 and C-28.00, above the burner deck	The diagonal braces frabricated from back-to-back angles are buckled. Increased risk of more damage to deaerator support structure during major wind or seismic event.	Two angles: 4" x 4" x ½", approx. 34' long, A-36 material Four angles: 4" x 4" x ¼", approx. 17' long, A-36 material One plate: ½" x 8" x 48", A-36 material Twelve plates: ½" x 4½" x 4½", A-36 material Thirty high strength, friction type bolts: ¾" x 3" long, A-325 material. One nut and one plain hardened washer per bolt.	Should review drawings from PREPA's files to verify material and installation requirements. Need to install scaffolding to access upper elevation of braces. Need to install rigging to lift back-to-back angles into position. A licensed structural steel engineer should recommend procedures for repair.			1	19-1, 19-2, 19-3
20	Deaerator Structural Steel	Between Columns C-28.00 and C-29.00, above turbine deck	The diagonal angle braces are deflected (appear to be in compression). Increased risk of more damage to deaerator support structure during major wind or seismic event.		A licensed structural steel engineer should inspect the deaerator structural steel.			2	20-1, 20-2
21	Deaerator Structural Steel	Between Columns C-26.00 and C-27.00, above ground floor	The diagonal angle braces and associated connection plates are buckled. Increased risk of more damage to deaerator support structure during major wind or seismic event.	One angle: 4" x 4" x ½", approx. 27' long, A-36 material Two angles: 4" x 4" x ½", approx. 13' long, A-36 material One plate: ½" x 6" x 26", A-36 material Eighteen high strength, friction type bolts: ¾" x 3" long, A-325 material. One nut and one plain hardened washer per bolt.	Should review drawings from PREPA's files to verify material and installation requirements. Need to install scaffolding to access upper elevation of braces. Need to install rigging to lift back-to-back angles into position. A licensed structural steel engineer should recommend procedures for repair.			1	21-1
22	Deaerator Structural Steel	Between Columns C-28.00 and C-29.00, above ground floor	The diagonal angle braces and associated connection plates are buckled. Increased risk of more damage to deaerator support structure during major wind or seismic event.	One angle: 4" x 4" x ½", approx. 27' long, A-36 material Two angles: 4" x 4" x ½", approx. 13' long, A-36 material One plate: ½" x 6" x 26", A-36 material Eighteen high strength, friction type bolts: ¾" x 3" long, A-325 material. One nut and one plain hardened washer per bolt.	Should review drawings from PREPA's files to verify material and installation requirements. Need to install scaffolding to access upper elevation of braces. Need to install rigging to lift back-to-back angles into position. A licensed structural steel engineer should recommend procedures for repair.			1	22-1, 22-2, 22-3
23	Deaerator to Boiler Feedwater Pumps, Common Suction Line	Inside the equipment building near the pipe entrance into the building	The structural steel supporting the pipe below the deaerator storage tank is deflected, ref. photo 23-1 and Item 18 above. At the next support hanger, hanger no. 3, the variable load spring assembly is fully compressed, ref. photos 23-2 and 23-3. At the following support hanger, hanger no. 4, the variable load spring assembly has limited travel remaining in the cold setting, ref. photos 23-4 and 23-5. Hanger no. 5 is a rigid hanger and appears to be in satisfactory condition.		After the structural steel identified in Item 18 is repaired, verify if the springs at hanger nos. 3 and 4 return to their normal cold setting position. If the springs do not return to their normal cold setting positions then it may be necessary to replace the spring assemblies.			1	23-1 through 23-6
24	Deaerator to Boiler Feedwater Pumps, Common Suction Line	Outside the equipment building near the pipe entrance into the building	A pressure tap pipe nipple (PT-19 per PREPA drawing 18.5-X321W) has failed. The failure occurred at the socket weld between the nozzle and the pipe.	Appears to be 1" pipe and nozzle, probably SA-106 material. Need to verify pipe materials on PREPA drawings.	Need to replace the pipe from the pipe nozzle to the isolation valve.			1	24-1, 24-2
25	Boiler Feedwater Pump - Machine Suction Line	Inside the equipment building	The first hanger downstream of the Tee from the common suction line is fully compressed. The second hanger downstream of the Tee from the common suction line is missing. The fourth hanger downstream of the Tee from the common suction line, which is located over the 90° elbow directly above the pump, has a bent rod. Oxidation pattterns on the flow orifice between the second and the third hangers indicate that it was leaking. Improper support of the suction pipe to the boiler feedwater pump could transfer load to the pump housing, which may distortion and damage to the pump. With the possible exception of the bent hanger rod the problems in this line are not associated with the earthquake.		Replace the missing rigid hanger. Replace the bent hanger rod at hanger no. 4. Verify that the spring hanger assemblies at hanger nos. 1 and 4 are functioning properly or replace the spring hanger assemblies in-kind. It would be necessary to review PREPA's drawings to determine the specifications for the hangers.			1	25-1 through 25-8
26	Stack 6-1 Bracing	The front stack brace at the top of the boiler structural steel	The connection plate between the front stack bracing and the boiler structural steel appears bent.		Need to re-inspect with binoculars or to install scaffolding for closer access to the connection.			1	26-1, 26-2
27	Stack 6-1 Bracing	The rear stack brace at the top of boiler structural steel	The bolts at the connection Tees between the rear stack bracing and the boiler structural steel appear to have failed.		Need to re-inspect with binoculars or to install scaffolding for closer access to the connection.			1	27-1
28	Stack 6-2 Bracing	The front stack brace at the top of boiler structural steel	The connection plate between the front stack bracing and the boiler structural steel appears bent.		Need to re-inspect with binoculars or to install scaffolding for closer access to the connection.			1	28-1, 28-2, 28-3
29	Stack 6-1 Bracing	The rear stack brace at the top of boiler structural steel	The connection between the rear stack bracing and the boiler structural steel has failed.	One I-beam: 10 WF 33, approx. 15' long, A-36 material Four angles: need to verify size, A-36 material Six high strength, friction type bolts: ¾" x 3" long, A-325 material. One nut and one plain hardened washer per bolt.	Need to inspect connection at stack. Need to install scaffolding to make detailed inspections and repairs. Welder would be needed to make repairs. If I-beam cannot be repaired and needs replacement then crane or rigging would be needed to lift I-beam into place.			1	29-1, 29-2, 29-3

30	Downcomer No. 6, Left Guide	Platform EL 137'	Connection to the boiler structural steel at Column E_5 has failed.		Remove the existing plate that separated from the web of the guide. Connect the guide to the angle on top of the structural steel beam at Column E5 with 6" x 12" x ¾" plates fabricated from A-36 material. The new plates should be seal welded with $^{3}/_{16}$" fillet weld to both sides of the web of the guide and seal welded with $^{3}/_{16}$" fillet weld to the angle on top of the structural steel. After lifting the guide to the horizontal position inspect the connection to the structural steel I-beam at Column F5. Scaffolding would be needed to access the connections.			2 and 3	30-1, 30-2, 30-3
31	Air Heater 6-1, Anti-Rotation Stops	At air heater platform and the left and the rear sides of air heater	Bent stops. Potential risk to air heater rotor and housing.	Bent columns: HP 8x36, 9" long each, A-36 material	Replace existing columns with new columns on the left side of the air heater (Qty. 2). Reposition the existing columns on the rear side of the air heater and re-weld (Qty. 2). Would need scaffolding to access the rear side of the air heater. Before putting the air heaters in service visually inspect the internals of the air heater; especially the housing, seals, rotor, trunions, and pin rack. Test the operation of the air heater with the auxiliary drive before using the main motor.	Anti-rotation stops coud be replaced in one day after replacement material is acquired and scaffolding is installed.		1	31-1, 31-2, 31-3
32	Air Heater 6-2, Anti-Rotation Stops	At air heater platform and the right and the rear sides of air heater	Bent stops. Potential risk to air heater rotor and housing.	Bent columns: HP 8x36, 9" long each, A-36 material	Replace existing columns with new columns on the right side of the air heater (Qty. 2). Reposition the existing columns on the rear side of the air heater and re-weld (Qty. 2). Would need scaffolding to access the rear side of the air heater. Before putting the air heaters in service visually inspect the internals of the air heater; especially the housing, seals, rotor, trunions, and pin rack. Test the operation of the air heater with the auxiliary drive before using the main motor.	Anti-rotation stops coud be replaced in one day after replacement material is acquired and scaffolding is installed.		1	31-1, 31-2, 31-3
33	Boiler Structural Steel	Column K_5 in front of Air Heater 6-2 at Platform EL 124'	Buckled connection plate. The stiffener above Platform EL 124' is missing.	Approx. dimensions of connection plate: 10' x 6' x ½", A-36 material Need to take dimensions of angle used as stiffener on one of the other connection plates.	Replace the missing stiffener. May be able to install additional stiffeners to reinforce the connection plate. A licensed structural engineer should inspect and provide recommendations for repair.			1	33-1, 33-2, 33-3, 33-4, 33-5
34	Flue Duct 6-1 Supports	Above ID Fan 6-1 Discharge at Platform EL 47'-4"	The front channel, which is a brace for the support channels, is slightly buckled.		Consider installing some gussets and stiffeners. Details to be provided later.			2 and 3	34-1, 34-2, 34-3
35	Flue Duct 6-2 Supports	Above ID Fan 6-2 Discharge at Platform EL 47'-4"	The front end of the left support channel is twisted and its connection with the front channel brace has failed.	One channel: C 12x25, 15'-8$^{13}/_{16}$" long, A-36 material One channel: C 12x25, 14'-7¾" long, A-36 material Two gusset plates: ½" x 3" x 11", A-36 material	Inspect expansion joint and flue duct for damage from inside the stack. Remove the lagging and the insulation covering the channel. Inspect the entire length of the support channels and its connects to the flue duct to determine required repairs. May need to provide temporary support for the duct to make repairs.			1	35-1, 35-2, 35-3
36	Flue Duct 6-2 Supports	Above ID Fan 6-2 Discharge at Platform EL 47'-4"	The connection between the right support channel and the rear channel brace has failed.	One channel: C 12x25, 15'-8$^{13}/_{16}$" long, A-36 material One channel: C 12x25, 14'-7¾" long, A-36 material Two gusset plates: ½" x 3" x 11", A-36 material	Inspect expansion joint and flue duct for damage from inside the stack. Remove the lagging and the insulation covering the channel. Inspect the entire length of the support channels and its connects to the flue duct to determine required repairs. May need to provide temporary support for the duct to make repairs.			1	36-1
37	Boiler Structural Steel	Base of Column H_5-29.10	Crack and spalled grouting near the centerline of the column	Less than 1 ft^3 of spalling and hairline crack less than 1 ft. long.	Cracks should be sealed with an epoxy like Sikadur 35, Hi-Mod LV. Need to clean grouting of oil and debris. Remove loose grout. Consult a civil engineer for repair procedures.			2 and 3	37-1, 37-2
38	Boiler Structural Steel	Base of Column L^5-27.50	Cracks in grouting. Cracks appear to have existed prior to the earthquake.	Approximately 4 linear feet of cracks.	Cracks should be sealed with an epoxy like Sikadur 35, Hi-Mod LV. Review records of prior repairs. Consult a civil engineer for repair procedures.			2 and 3	38-1, 38-2, 38-3
39	Boiler Structural Steel	Base of Column near draft fans	Multiple cracks in grout. Cracks believed to have existed prior to the earthquake.	Approximately 20" x 40" x 6"	Loose grout should be removed. Consult a civil engineer for repair procedures.			2 and 3	39-1, 39-2, 39-3
40	Gas Recirculation (GR) Fan Pedestal	Below GR Fan housing	Multiple cracks in pedestal. Cracks are located in area of prior repairs.	Approximately 1' x 1' x 10'	Loose grout should be removed. Consult a civil engineer for repair procedures.			2	40-1
41	Induced Draft (ID) Fan 6-1 Pedestals	Below ID Fan motor and bearings	Two foot long crack in previously repaired section of pedestal. Spalling of grouting around base of motor.		Per Fernando Rivera, PREPA had plans to repair the draft fan pedestals prior to the earthquake.			2	41-1, 41-2, 41-3
42	Induced Draft (ID) Fan 6-2 Pedestals	Below ID Fan motor and bearings	Six foot long crack in the corner of the pedestal.		Per Fernando Rivera, PREPA had plans to repair the draft fan pedestals prior to the earthquake.			2	42-1, 42-2
43	Blowdown Tank Pedestal	Front, right (south-west) pedestal	Multiple cracks in pedestal.	Approximately 20" x 12" x 9"	Remove loose concrete. Consult a civil engineer for repair procedures.			2	43-1, 43-2
44	Boiler Buckstay Guide	Boiler Left Sidewall at Buckstay EL 177'-10"	Guide attached to structural steel is crushed. The guides attached to the buckstay are bent.	One Channel: C 8x11.5, 15" long, A-36 material Qty. 1 of GE assembly no. FG-31 per drawing E-651-332 Qty. 2 of GE assembly no. FG-30 per drawing E-651-332	Replace the existing guides with new guides. Scaffolding would be needed to access the guides.			1	44-1, 44-2, 44-3
45	Boiler Buckstay Guide	Boiler Right Sidewall at Buckstay EL 177'-10"	Guide attached to structural steel is crushed. The front guide attached to the buckstay is bent.	One Channel: C 8x11.5, 15" long, A-36 material Qty. 1 of GE assembly no. FG-31 per drawing E-651-332 Qty. 1 of GE assembly no. FG-30 per drawing E-651-332	Replace the existing guides with new guides. Scaffolding would be needed to access the guides.			1	45-1, 45-2, 45-3
46	Steam Drum Enclosure Frame	Bottom of enclosure	The frame at the left sidewall has separated from the rear frame.	The two I-beams at the joint are specified as 18 WF 45, GE part nos. VRF-48 and VRF-49, fabricated from A-36 material. The coupling at the joint is specified as two ¼" bent plates fabricated from A-36 material. The 5" x approx. 20" plates are bent to fit between the flanges and against the web of the I-beams. Reference C-E drawing no. E-651-301.	The frame at the left end of the enclosure needs to be repositioned so that the couplings fit inside the I-beam at the rear frame. Inspect the sloted frame connections from inside the enlosure for broken fasteners and/or failed plates.			2	46-1, 46-2
47	Boiler Buckstay Guide	Boiler Front Wall between Buckstay EL 137'-10" and 127'-10"	The vertical guide, FG-29, is not plumb and the flanges at the bottom of the guide are bent. Angle, FG-25, is missing and the flanges of the Tees, FG-24, are bent.	Two Tees: WT 6x13.5, 6" long, A-36 material Qty. 2 of GE assembly no. FG-24 per drawing E-651-331 One Angle: L 3x3x¼, 3" long, A-36 material Qty. 1 of GE assembly no. FG-25 per drawing E-651-331 Qty. 1 of GE assembly no. FG-29 per drawing E-651-331 One Plate: 18" x 12" x 0.415", A-36 material	Replace the missing angle (FG-25) and the bent Tees (FG-24). Reset the vertical guide assembly (FG-29) in the plumb position. It may be necessary to replace or reinforce the web of the buckstay at EL 137'-10" where the vertical guide is welded. May reuse the vertical guide assembly (FG-29) if the flanges at the bottom of the guide are straightened out. Would need scaffolding to access the guides.			1	47-1, 47-2, 47-3
48	Boiler Buckstay Guide	Boiler Left Sidewall between Buckstay EL 137'-10" and 127'-10"	The vertical guide assembly, FG-22, is not plumb and slightly twisted. Angle, FG-25, is missing and the flange of one of the Tees, FG-24, is bent.	One Tee: WT 6x13.5, 6" long, A-36 material Qty. 1 of GE assembly no. FG-24 per drawing E-651-330 One Angle: L 3x3x¼, 3" long, A-36 material Qty. 1 of GE assembly no. FG-25 per drawing E-651-330 Qty. 1 of GE assembly no. FG-22 per drawing E-651-330 One Plate: 18" x 12" x 0.415", A-36 material	Replace the missing angle (FG-25) and the bent Tee (FG-24). Reset the vertical guide assembly (FG-29) in the plumb position. It may be necessary to replace or reinforce the web of the buckstay at EL 137'-10" where the vertical guide is welded. May reuse the vertical guide assembly (FG-29) if the guide can be straightened out. Would need scaffolding to access the guides.			1	48-1, 48-2, 48-3
49	Boiler Buckstay Guide	Boiler Rear Wall between Buckstay EL 137'-10" and 127'-10"	The angle, FG-25, is bent.	One Angle: L 3x3x¼, 3" long, A-36 material Qty. 1 of GE assembly no. FG-25 per drawing E-651-331	Straighten out or replace the bent angle (FG-25).			2	49-1, 49-2, 49-3

50	Boiler Buckstay Guide	Boiler Right Sidewall between Buckstay EL 137'-10" and 127'-10"	The flanges of the vertical guide assembly, FG-22, are buckled and the horizontal guide assemblies, FG-20, are twisted.	Two Channels: C 18x58.0, 13'-2½" long, A-36 material Qty. 2 of GE assembly no. FG-20 per drawing E-651-330 Qty. 1 of GE assembly no. FG-22 per drawing E-651-330	Replace the two horizontal guides and the vertical guide assembly. Would need scaffolding to access the guides.			2	50-1, 50-2, 50-3
51	Boiler Buckstay Guide	Boiler Rear Wall at Buckstay EL 89'-3"	The two horizontal guide assemblies attached to the buckstay are buckled.	Two I-beams: W 21x55, 2'-6" long, A-36 material Qty. 2 of GE assembly no. FG-16 per drawing E-651-329	Replace the buckled guide assemblies.			2	51-1, 51-2, 51-3
52	Boiler Buckstay Guide	Boiler Front Wall between Buckstay EL 50'-6" and 40'-6"	The vertical guide assembly, FG-5, is crushed and bent. The angle, FG-4, at Buckstay Elevation 40'-6" is missing.	One Angle: L 2x2x¼, 18¼" long, A-36 material Qty. 1 of GE assembly no. FG-4 per drawing E-651-328 Qty. 1 of GE assembly no. FG-5 per drawing E-651-328	Replace the buckled guide assembly and the missing angle.			1	52-1, 52-2, 52-3, 52-4, 52-5
53	Boiler Buckstay Guide	Boiler Left Sidewall between Buckstay EL 50'-6" and 40'-6"	The vertical guide assembly, FG-1, is twisted and buckled. The rear horizontal guide assembly, FG-2, is bent.	Qty. 1 of GE assembly no. FG-1 per drawing E-651-328 Qty. 1 of GE assembly no. FG-2 per drawing E-651-328 One Plate: 18" x 12" x 0.460", A-36 material	Replace the twisted and buckled vertical guide assembly and the bent horizontal guide assembly. It may be necessary to replace or reinforce the web of the buckstay at EL 50'-6" where the vertical guide is welded. Would need scaffolding to access the guides.			1	53-1, 53-2, 53-3, 53-4, 53-5
54	Boiler Buckstay Guide	Boiler Rear Wall between Buckstay EL 50'-6" and 40'-6"	The vertical guide assembly, FG-5, is slightly twisted and its flanges are buckled.	Qty. 1 of GE assembly no. FG-5 per drawing E-651-329	Replace the twisted and buckled vertical guide assembly. Could access the bottom of the guides from the gas recirculation duct.			2	54-1, 54-2, 54-3, 54-4, 54-5
55	Boiler Buckstay Guide	Boiler Right Wall between Buckstay EL 50'-6" and 40'-6"	The vertical guide assembly, FG-1, is twisted and buckled. The angle, FG-4, at Buckstay Elevation 40'-6" is missing.	One Angle: L 2x2x¼, 18¼" long, A-36 material Qty. 1 of GE assembly no. FG-4 per drawing E-651-328 Qty. 1 of GE assembly no. FG-1 per drawing E-651-328	Replace the twisted and buckled vertical guide assembly and the missing angle at Buckstay EL 40'-6". Would need scaffolding to access the guides.			2	55-1, 55-2, 55-3
56	Boiler Buckstay Levelers	Furnace Front and Rear Waterwalls from EL 89'-3" to 50'-6"	Failed retainer bolt, reference photos 56-2 and 56-3. Bolt in photo 56-1 appears to be okay and correctly installed.	Need to inspect each leveler to identify quantity of failed bolts. Bolt specification is ¾" dia. X 11 UNC x 3½" long, A307-A or A563-B material. Total quantity of bolts per boiler is 48. Two nuts are required per bolt.	Replaced bent, failed, or missing bolts and install per specifications on GE drawing C-994-300.			2	56-1, 56-2, 56-3
57	Superheater Desuperheater, Right - Support Hanger	In front of boiler at Platform EL 146'	Missing cotter pin.	Qty. 2 of Anvil International Fig. 291, Cotter Pin: ¼" x 3"	Replace the missing cotter pin. Verify the type of device installed on the other side of the clevis pin. If it is not a cotter pin then replace it with a cotter pin.			2 and 3	57-1, 57-2
58	Superheater Desuperheater, Left - Support Hanger	In front of boiler at Platform EL 146'	Missing bent pins. Wire or welding electrodes have been installed in place of bent pins.	Two Bent Pins: 5/16" x 3¼", carbon steel	Replace the wire/electrodes installed in the clevis pin with bent pins. Bent pins are bent after installation.			2 and 3	58-1, 58-2
59	High-Pressure Flash Tank Safety Valve	Deaerator Storage Tank Platform	The stanchion supporting the safety valve vent pipe has failed. The safety valve is not plumb. The pipe elbow connection to the flash tank appears to be rotated.		Remove insulation covering the pipe elbow connection to the flash tank and perform visual inspection of the connection. Consider modifying vent piping to eliminate long horizontal run and required support.			1	59-1 through 59-6
60	Cold Reheat Pipe 6-2, Support Lug	Below deaerator and above burner deck	Support lug made hard contact with hot reheat pipe 6-2		Visually inspect the support lug and the hot reheat pipe for damage. Perform visual and magnetic particle test on the support lug attachment welds to the cold reheat pipe. Would need to install scaffolding to access the support lug.			2	60-1, 60-1, 60-3
61	Cold Reheat Pipe 6-1	Above roof of equipment building, adjacent to feedwater pipes	Damaged lagging and insulation	Approx. 3 ft^2 area of damaged/missing insulation	Replace missing and damaged insulation and lagging. Recommend covering the cold reheat pipe with Johns Manville Thermo-1200 insulation, 4" to 5" thick. Cover insulation with corrugated aluminum jacketing, 0.20" thick. The OD of cold reheat pipe is 26". The operating temperature of the cold reheat pipe is approximately 610°F.			2	61-1
62	Reheater Desuperheater Spray Water Valve	Above roof of equipment building, adjacent to feedwater pipes	Leak in instrument air supply to the valve pressure regulator. The instrument air tubing made contact with the adjacent feedwater pipe.	Appears to ¼" stainless steel tubing, approximately 1' long.	Need to replace approx. one foot of instrument tubing.			2 and 3	62-1, 62-2, 62-3
63	Equipment Building Structural Steel	Adjacent to Cold Reheat Pipe 6-2 at Structural Steel Column B	Bent vertical structural member.	Appears to be a channel or column that is approximately 5' high with flanges that are approximately 4" wide.	Need to install scaffolding to perform a detailed inspection and to take measurements.			2 and 3	63-1, 63-2
64	Hot Reheat Pipe 6-2 Support Hanger	Adjacent to Boiler Feedwater Pipe at EL 34'	Contact between the support hanger and the Boiler Feedwater Pipe		Inspect the support hanger and the feedwater pipe for damage, especially the support lug attachment welds to the structural steel. Consider performing magnetic particle tests on the lug attachment welds to the structural steel. Scaffolding would be needed to access the hanger.			2	64-1, 64-2, 64-3
65	Hot Reheat Pipe 6-1	Inside the equipment building near Structural Steel Column B	The left (north) support hanger rod is bent. The spring hanger assembly is topped out.	Hanger rod is approx. 1½" diameter x 10' long. Need to review PREPA drawings to determine rod specifications.	Replace the hanger rod. Review past assessment reports to determine if the length of the hanger assembly can be shortened so that the spring assemblies are not topped out in the cold setting. Would need to provide temporary support for the pipe while replacing the hanger rod. Would need scaffolding to access the hangers.			2	65-1, 65-2, 65-3
66	Hot Reheat Pipe 6-1	Below steam turbine concrete pedestal	Concrete covering support hanger anchor plate has spalled and is missing.	Approx. 9 ft^2 area of damaged concrete and/or grouting	Knock out loose/damaged concrete remaining. Inspect support hanger anchor plate and remaining concrete. Replace damaged/missing concrete. A civil engineer should recommend type of conrete and installation procedures. It would be necessary to install scaffolding to access the support hanger anchor plate.			2 and 3	66-1, 66-2
67	Extraction Line from Hot Reheat Crossover Pipe	Mezannine Platform between Structural Steel Columns A and B	Support hanger rod is not connected to the pipe clamp. Hanger rod nearby is bent.	Hanger rod is approx. ½" diameter x 20' long. Need to measure size of clevis pin required. Would need to review PREPA drawings to determine length of hanger rod.	May be able to reuse the hanger rod. Measure the size of the clevis and the clamp to determine the required size for the clevis pin.			2 and 3	67-1, 67-2, 67-3
68	Small Bore Pipe from Boiler Feedwater Pump - Turbine Suction Line	Below the Boiler Feedwater Pump - Turbine	Support hanger rod for approx. 4" uninsulated pipe is not connected to the pipe clamp. The hanger rod and trapeze assembly are hanging nearby.	Need a ¾" to 1" pin and cotter pins. Woud need scaffolding to measure the size of the pin required.	May be able to reuse the hanger rod and trapeze assembly. Measure the size of the clevis and the clamp to determine the required size for the clevis pin. Would need to install scaffolding to access the hanger and pipe clamp. May need to raise the pipe to its correct elevation to connect hanger assembly to the pipe clamp.			2 and 3	68-1, 68-2
69	Boiler Feedwater Pump - Turbine Discharge Pipe	Near non-return valve between Structural Steel Columns A and B	Rigid support hanger rod is bent.	Hanger rod is approx. 2" diameter x 3' long. Need to measure the hanger rod or review PREPA drawings to verify hanger dimensions and specifications. Would need scaffolding or fall safety equipment to measure the hanger rod.	Should replace the hanger rod. Would need to provide temporary support for the pipe while replacing the hanger rod.			2	69-1, 69-2

70	Boiler Feedwater Pump - Turbine Discharge Pipe	Inside the equipment building near Structural Steel Column B	Damage to lagging and insulation on the feedwater pipe and the hot reheat pipe 6-1. The feedwater (FW) pipe lagging was damaged by contact with a handrail. The lagging and insulation on hot reheat (HRH) pipe 6-1 was damage by contact with a feedwater pipe support hanger.	The length of damage to the FW pipe lagging and insulation is approx. 3'. The FW pipe diameter is 12" and normal operating temperature is approx. 350°F. The length of damage to the HRH pipe lagging and insulation is 2'. The HRH pipe diameter is 23" and design operating temperature is 1005°F.	Replace the damaged lagging and insulation. Recommend covering the FW pipe with Johns Manville Thermo-1200 insulation, 4" thick. Cover insulation with corrugated aluminum jacketing, 0.20" thick. The OD of FW pipe is 12". The operating temperature of the FW pipe is approximately 350°F. Recommend covering the hot reheat pipe with Johns Manville Thermo-1200 insulation, 8" to 9" thick. Cover insulation with corrugated aluminum jacketing, 0.20" thick. The OD of hot reheat pipe is 23". The operating temperature of the hot reheat pipe is approximately 1005°F. Would need scaffolding to replace the lagging and insulation.			2	70-1, 70-2
71	Boiler Feedwater Pump - Turbine Discharge Recirculation Line to Deaerator	Inside the equipment building near Structural Steel Column B	Rigid support hanger rod is not connected to the pipe clamp.	Need to review PREPA drawings or measure the clevis dimensions to determine the size of the pin required. Would need scaffolding to access the hanger and clevis. The upper side of the pipe clamp may be missing a fastner and the hanger rod appears slightly bent.	Need to inspect the pipe clamp and to take dimensions of the hanger and clevis. Need to remove some insulation to inspect the pipe clamp. Would need scaffolding to access the pipe and the hanger support assembly.			2	70-1, 70-2
72	Common Boiler Feedwater Pipe to High-Pressure Feedwater Heaters	Inside the equipment building below Main Steam Pipe 6-2	Damaged lagging and insulation	Approximately 3 linear feet of lagging and insulation damaged.	Replace the insulation and lagging. Recommend Johns Manville Thermo-1200 insulation, 4" thick, and corrugated aluminum jacketing, 0.20" thick. Pipe OD is 16" and operating temperature is approx. 350°F.			2	72-1, 72-2
73	Common Boiler Feedwater Pipe to High-Pressure Feedwater Heaters	Inside the equipment building upstream of the HPFW Heaters	Threaded studs used to pin support hanger assembly to support steel and pipe clamp. Threaded studs do not have the strength of pins and vibrations from operation and earthquakes could cause studs to slide out of connections.	Need to measure dimensions of clevis, eyes, and pipe clamp or review PREPA drawings to verify dimensions and specifications of pins.	Replace the threaded studs with pins and cotter pins. Would need to provide temporary support for the feedwater pipe to replace the threaded studs. Woud need scaffolding to access the hanger.			2	73-1, 73-2, 73-3
74	Support Hanger for Common Boiler Feedwater Pipe to Economizer	Inside the equipment building approx. 12' from Column C Structural Steel	Nut is not threaded against turnbuckle. Vibrations may cause rod to turn and change the length of the hanger rod.		Thread the nut snug against the turnbuckle. Would need scaffolding to access the hanger.			2	74-1, 74-2, 74-3
75	Equipment Building Wall Panel	Inside the equipment building approx. 2½' from Column C Structural Steel	Contact with the feedwater piping has caused one section of panel to collapse and another section of panel has been crushed, reference photos 74-1 and 74-2. For comparison reference the wall panel of Unit 5 in photo 74-3.	Wall panel appears to be fabricated from metal sheets, width and height is approximately 8' x 20'. Need to measure dimensions and thickness of panels.	Replace in-kind.			2 and 3	75-1, 75-2, 75-3
76	Support Hangers for Common Boiler Feedwater Pipe to Economizer	Last three support hanger assemblies upstream of Tee to Economizer	The three support hanger assemblies upstream of the Tee to the Economizer are topped out. The right (south) hanger rod of the hanger assembly immediately upstream of the Tee is bent, reference photo 75-6.	The bent hanger rod is 1" to 1½" in diameter and approximately 8' long. Need to measure or review PREPA drawings for the specifications of the hanger rod.	Review the cold and the hot settings of these hangers in previous inspection reports. Do not adjust cold setting of hangers until the hot setting is known. If there is sufficient room for more travel in the hot setting then the cold setting position may be adjusted.			2	76-1 through 76-7
77	Left Boiler Feedwater Pipe to Economizer	Pipe elbow near Column E_5-25.9 at EL 86'	Failure of lagging and insulation at pipe 90° elbow.	Missing insulation at 90° pipe elbow.	Replace missing insulation and lagging. Recommend Johns Manville Thermo-1200 insulation, 4" thick, and corrugated aluminum jacketing, 0.20" thick. Pipe OD is 12" and normal operating temperature is approximately 470°F. Scaffolding would be required to reinstall the lagging and the insulation.			2	77-1, 77-2
78	Left Boiler Feedwater Pipe to Economizer	Below Boiler Buckstay Guide at EL 86'	Damage to lagging and insulation.	Approximately 2 linear feet of damage to lagging and insulation.	Replace damaged lagging and insulation. Recommend Johns Manville Thermo-1200 insulation, 4" thick, and corrugated aluminum jacketing, 0.20" thick. Pipe OD is 12" and normal operating temperature is approximately 470°F.			2	78-1, 78-2
79	Natural Gas Burner Piping	Bottom burner elevation at each burner corner	Impact between burner platform and natural gas piping dented and gouged the piping.	Two to four linear inches of contact.	Ground smooth any gouges in pipe and test with dye-penetrant. If no indications are found then repaint pipe. Use SSPC SP1 and SP11 procedures for surface preparation and SSPC PA1 for paint application. Base primer should be 12 mils of high solids epoxy alumina and top coat should be 4 mils of high solids siloxane. Recommended primer is PPG Amerilock 400 AL. Recommended top coat is PPG PSX-700. Visually inspect natural gas pipe and burners inside of windbox and furnace for potential damage.			1 (inspections) 2 (repainting)	79-1 through 79-12
80	Natural Gas Burner Flexible Piping	Bottom burner elevation at Burner Corner D	Impact between burner platform and flexible natural gas piping.	Only a few linear inches of contact.	Perform remote visual inspections of flexible pipes for Burners D1 and D2 or remove the flexible pipes for visual inspection. Upon the restart of the boiler test all burner flexible natural gas pipes for leaks. Any burner with a leak in a flexible natural gas pipe shall be isolated until the flexible pipe can be replaced. Have spare hose assemblies available in the warehouse. Original hoses were supplied by COEN.			1 and 3	80-1, 80-2, 80-3
81	Platform Grating	At Hot Reheat Pipe 6-2 Safety Valve	Grating patiallly covering the opening at the hot reheat safety valve was knocked loose.	Approximately 9" x 28"	Grating was removed from the hole and set on top of the adjacent platform. For the safety of plant personnel consider installing handrails around the opening. The dimensions of the opening is approximately 28" x 48".			2 and 3	81-1, 81-2
82	Boiler Lagging and Insulation	Front side of the right burner connecting duct above Buckstay EL 89'-3"	Loose lagging and fallen insulation	At least 4' x 8'. Need to remove lagging to inspect insulation to determine extent of damage to insulation.	Replaced damaged insulation. Insulate per C-E drawing E-654-403, Section "J-J". Lagging may be reused.			2	82-1, 82-2, 82-3
83	Windbox Damper Drives	At burner windboxes	Several damper drives are disconnected from the damper levers. A few damper drives have slid partially off the supports.		Inspect each windbox damper drive assembly. Reconnect disconnected links and replace missing external retaining rings. Stroke test the windbox dampers and verify that they are working properly before returning the unit to service.			1	83-1, 83-2, 83-3
84	Grating	Between Stack 6-2 and Air Duct 6-2 below Air Heater 6-2	Crushed grating	Grating dimensions less than 4' x 8'	Inspect condition of grating support steel. Safety equipment would be required to inspect the support steel. Prohibit access to the grating without safety equipment until the support steel can be inspected. Replace grating with serrated, galvanized, W-19-4, ¼" x 1¼" welded bar grating (type W/BA cross bars on 4" centers).			1 (prohibit access until inspection completed) 2 and 3 (repairs)	84-1, 84-2
85	Platform Grating	Deaerator Storage Tank and Heater Platforms	Loose grating and broken grating clamps	Two floor panels from each elevation. Need approximately 24 grating clamps.	Lift floor panels into correct position and secure with grating clamps. Replace broken grating clamps.			1	85-1, 85-2, 85-3
86	Drips 6-5 Pipe Support	Deaerator Storage Tank Platform	Failed pipe stanchion	Approximately dimensions of pipe: 1½" diameter x 18" long	Remove insulation covering the pipe elbow and inspect pipe.			2	86-1, 86-2
87	Stack 6-2	Base of Stack at Platform EL 47'-4"	Corroded flanges at the base of the stack. Corrosion is severe at two locations; at the top flange below the access door and at the bottom flange on the rear side of the stack.	Approximately 20' of 10¾" x ¾" plate fabricated from A-36 material bent to fit the OD of the stack, which is 14'-0¼", is severely corroded.	Portions of the base of the stack are not accessible. Need to install scaffolding or safety equipment to complete inspection of the flanges. Severely corroded flanges should be replaced, which would require temporary stack support approved by a licensed structural engineer.			1	87-1, 87-2
88	Platform Grating	Right (south) side of boiler,	Loose grating	Grating dimensions is approximately 4' x 3'	Reposition grating flush with surrounding grating and secure with			1	88-1, 88-2, 88-3

[illegible]	[illegible]	Platform EL 47'-4"	[illegible]	Need approximately 8 grating clamps.	grating clamps.			1	[illegible]
89	Grating	At Main Steam 5-1 safety valve and above sootblower piping header	Loose grating	Can reuse grating. Need approximately 30 grating clamps.	Reposition grating flush with surrounding grating and secure with grating clamps.			1	89-1, 89-2, 89-3
90	Platform Grating	Platform EL 58'-10" at Hot Reheat Pipe 6-1	Loose grating	Can reuse grating. Need approximately 36 grating clamps.	Reposition grating flush with surrounding grating and secure with grating clamps.			1	90-1, 90-2
91	Platform Grating	Platform EL 38' in front of Boiler Water Circulating Pump Suction Manifold	Loose grating	Can reuse grating. Need approximately 50 grating clamps.	Reposition grating flush with surrounding grating and secure with grating clamps.			1	91-1, 91-2, 91-3
92	Handrails	Inside equipment building at mezzanine elevation near rear wall	Loose handrails	Can reuse handrails.	Install handrail in its correct position. Would require a welder to repair.			1	92-1, 92-2
93	Platform Grating	Inside equipment building at mezzanine elevation near rear wall	Loose grating	Can reuse grating. Need approx. 24 grating clamps.	Reposition grating flush with surrounding grating and secure with grating clamps.			1	93-1
94	Platform Grating	Mezannine Platform below Main Steam Chest	Loose grating	Can reuse grating. Need approx. 24 grating clamps.	Reposition grating flush with surrounding grating and secure with grating clamps. Would need to clean debris in area.			1	94-1, 94-2, 94-3
95	Grating	Below turbine deck at Reheat Intercept Valves	Loose grating	Can reuse grating. Need approx. 18 grating clamps.	Reposition grating flush with surrounding grating and secure with grating clamps.			1	95-1, 95-2, 95-3
96	Ignitor Air Instrument Tubing	Platform EL 59' behind Furnace adjacent to Ignitor Air Duct	Smashed instrument tubing	Approximately ½" diameter copper tubing	Need to replace at least 2 feet of instrument tubing			1	96-1, 96-2
97	Boiler Buckstay Guides	Reference Item nos. 44, 45, 47 through 55	Reference Item nos. 44, 45, 47 through 55	Reference Item nos. 44, 45, 47 through 55	Only large impact forces could have caused the damage found on the majority of the buckstay guides. These impacts may have caused damage inside the boiler. Visually inspect the pressure parts, seal boxes, anti-vibration baffles, tension plates, burners, gas distribution baffles, puff ties and bumpers inside the boiler and the vertical trusses inside the windbox connecting ducts for potential damage. Perform hydrostatic pressure test before returning the boiler to service.			1	44-1 through 45-3 and 47-1 through 55-3
98	Boiler Buckstays	Front Wall at EL 177'-10" inside the Penthouse	Several levelers have rotated and no longer support the front wall buckstay at EL 177'-10"		Where the hangers are not providing support for the front wall buckstay at EL 177'-10", rotate the levelers (angles with gusset plates) so that they are snug tight against the underside of the buckstay. Tack welds on the nuts to the hanger rods may have to be broken to adjust the height of the levelers. The nuts should be tack welded to the hanger rods after the levelers are properly positioned.			2	98-1, 98-2, 98-3
99	Boiler Buckstays	Front Wall at EL 177'-10" inside the Penthouse	Buckled stirrup.	Stirrup Type C, Part No. P-2 per C-E Drawing No. D-991-064 with bent plate per Detail 16, C-E Drawing No. E-645-789.	Monitor the stirrups at this buckstay during future outages. If 5 or more stirrups are buckled then consider replacing the stirrups.			2	99-1
100	Penthouse Enclosure	Inside the Penthouse near the front, left corner of the boiler	Fallen insulaton and corrosion of enclosure frame	Approximately 60 ft^2 of insulation.	Clean out the fallen and deteriorated insulation. The original drawings do not require insulation over the corrugated steel. Verify that there is plastic insulation and calcium silicate block insulation between the corrugated steal and the outer casing per C-E Drawing No. E-655-922, Sections "K-K" and "M-M". Clean and test the remaining wall thickness of corroded framing channels and plates.			2	100-1 through 100-5
101	Penthouse Enclosure	Inside the Penthouse near the front, right corner of the boiler	Water infiltration		Inspect the weather roof for the source of the water infiltration. Would need to provide access between the weather roof and the penthouse roof.			2	101-1 through 101-4
102	Supports for Waterwall Riser Tubes and Superheater Connection Tubes	Hanger Line "B" inside of Penthouse	A couple of the waterwall riser tube supports attachment welds and have rotated out of alignment.	Part nos. PH-79 and PH-85 per C-E Drawing No. E-645-429.	Re-align the supports and weld to tubes per C-E Drawing No. E-645-429.			2	102-1, 102-2
103	Front Waterwall Hanger Tube Supports	Above the Front Waterwall Hanger Tubes inside the Penthouse	A few of the front waterwall hanger tube supports are loose.	Part no. 127 per C-E Drawing No. E-645-429.	Tighten loose hanger rods until the rods are snug. Do not overtighten. After tightening the hanger rods, inspect the hanger rods again during the next scheduled outage.			2	103-1, 103-2, 103-3
			A few of the front waterwall hanger tube supports are missing bent pins in the clevis pins.	Need to order drawings from GE. Bent pin is probably specified as $^5/_{32}$" diameter x 2½" long, AISI type 430 material.	Install bent pins where no pins are installed or where the incorrect material is installed.				
104	Front Waterwall Tubes Skin Casing	Below the Front Waterwall Outlet Header (H-2)	Small cracks in the skin casing, especially at each end of the front waterwall.	Less than 2 linear feet of cracks. Need to order drawings from GE. Casing is probably specified as 12 gage, ASTM A-569 material.	Weld repair the cracks. Where possible install a plate over the failed crack and seal weld.			2	104-1 through 104-6
105	Front Waterwall Tubes Skin Casing	Below the Roof Tubes inside the Penthouse	Small holes and cracks in the skin casing.	Less than 2 linear feet of cracks. Need to order drawings from GE. Casing is probably specified as 12 gage, ASTM A-569 material.	Weld repair the cracks. Where possible install a plate over the failed crack and seal weld.			2	105-1 through 105-5
106	Superheater Platen Inlet Tube Support Hanger	Front row of Hanger Tubes inside the Penthouse	Clevis pin is missing a bent pin.	Need to order drawings from GE. Bent pin is probably specified as $^5/_{32}$" diameter x 2¼" long, AISI type 430 material.	Install a bent pin.			2	106-1
107	Penthouse Enclosure	Above the front convection pass	Water infiltration	Deterioration of penthouse roof and corrosion of equipment inside the penthouse.	Inspect the weather roof for the source of the water infiltration. Would need to provide access between the weather roof and the penthouse roof. Repair the penthouse roof per the recommendations in GE Service Information Letter, SIL 195-02.			2	107-1 through 107-9
108	Supports for Waterwall Riser Tubes and Superheater Connection Tubes	Hanger Lines "D" and "E" inside of Penthouse	Fallen stachions	Piece mark no. PH-85	Need to identify the original position of the fallen stachions and reinstall the stachions in their proper location per C-E Drawing No. E-645-429.			2	108-1, 108-2
109	Roof Tube Supports	Below Header SH-4 inside the Penthouse	Missing clevis pin, missing bent pins, and missing nut	Need to order drawings from GE. Clevis pin is probably specified as 1¼" diamter x 2¼" long, SA-29 material. Bent pin is probably specified as $^5/_{32}$" diameter x 2½" long, AISI type 430 material. Nut is specified as 1¼" diameter, 8 UN Class 2, SA-194-2 (aluminized)	Install pins and nuts per C-E Drawing Nos. E-645-429 and E-645-428 where pins and nuts are missing.			2	109-1, 109-2, 109-3, 109-4
110	Support Hangers for Economizer Outlet Links	Hanger Lines "D" and "G" inside of Penthouse	Two U-bolts supporting the economizer outlet links at the right side of the penthouse have failed.	Qty. 2 of assembly no. PH-68 per C-E Drawing No. E-645-432.	Replaced the failed U-bolts and associated nuts.			1	110-1, 110-2, 110-3, 110-4

111	Support Hangers for Economizer Outlet Links	Hanger Lines "D" and "G" inside of Penthouse	At the left side of the penthouse the U-bolt at Hanger Line "G" is loose and the U-bolt at Hanger Line "D" is bent and twisted.	Qty. 2 of assembly no. PH-68 per C-E Drawing No. E-645-432.	Replace the damaged U-bolt at Hanger Line "D" and tighted the U-bolt at Hanger Line "G" until it is snug.			2	111-1, 111-2, 111-3, 111-4
112	Vertical Buckstay Support Hangers	Above the Left and the Right Vertical Buckstays inline with Header H-4 inside of Penthouse	Loose hanger rods	1¼" diameter rod, piece mark no. FUB-103 per C-E Drawing No. E-650-434.	Tighten loose hanger rods until the rods are snug. Do not overtighten. After tightening the hanger rod, inspect the hanger rod again during the next scheduled outage.			2	112-1, 112-2
113	Guides for Headers H-4, H-3L, and H-3R	At the Left and the Right Sidewall Outlet Headers (H-3L and H-3R) inside the Penthouse	Failed fillet welds	Need to order drawings from GE for plate and weld specifications. Header SH-4 specification: 10¾" OD x 1.750" NWT, SA-106-B	Weld repair the cracks to Header H-4 and to Header H-3L/R guides. Fillet welds to headers are specified as ⅜" and guide to guide fillet welds are specified as ¼". Follow NBIC Part 3 Codes when welding to the header.			2	113-1, 113-2, 113-3
114	Header H-4 Support Hangers	Inside the Penthouse at Hanger Line "J"	Loose hanger rods and missing bent pins	Need to order drawings from GE. 2¼" rods, 1% chrome, ½% moly. material. Bent pin is probably specified as 5/32" diameter x 4" long, AISI type 430 material.	Replace missing bent pins and tighten loose hanger rods. Do not overtighten. After tightening the hanger rods, inspect the hanger rods again during the next scheduled outage.			2	114-1, 114-2, 114-3
115	Right Sidewall and Boiler Roof Tube Skin Casing	Inside the Penthouse between the Right Sidewall and the Rear Wall Screen Tubes	Buckled right sidewall casing and cracked roof tube casing	Need to order drawings from GE. Skin casing probably specified as 12 gage, ASTM A-569 material.	Replace buckled and cracked casing.			2	115-1, 115-2, 115-3
116	Economizer Support Outlet Terminal Tube Support Hangers	Inside the Penthouse at Hanger Line "K"	Loose hanger rods	1½" rods, 1% chrome, ½% moly. material.	Tighten loose hanger rods until the rods are snug. Do not overtighten. After tightening the hanger rod, inspect the hanger rod again during the next scheduled outage.			2	115-1, 115-2
117	Header H-3R Support Hangers	Inside the Penthouse above Header H-3R	Loose hanger rod and missing bent pins. A welding rod or wire was installed in place of the bent pin.	Need to order drawings from GE. 2¼" rods, 1% chrome, ½% moly. material. Bent pin is probably specified as 5/32" diameter x 3¾" long, AISI type 430 material.	Replace missing bent pins and tighten loose hanger rods. Do not overtighten. After tightening the hanger rods, inspect the hanger rods again during the next scheduled outage.			2	116-1, 116-2
118	Header EH-3 Guides	Inside the Penthouse above Headers H-3L and H-3R	Buckled channles in the guide assemblies at each end of Header EH-3	Need to order drawings from GE.	Install gusset plates between the flanges of the buckled channels.			2	117-1, 117-2, 117-3
	Boiler Roof Tube Support Hangers	Inside the Penthouse below Header EH-3	Bent hanger rod in the hanger assemblies at each end of Header EH-3	1" diameter x 10" long; 2" of threads at top end and 4" of threads at bottom end; 8 UN-RH; 1% Chrome, ½% Moly. material per C-E Drawing Nos. E-645-430 and E-645-428.	Replace the hanger rods.				
119	Headers RH-2 and SH-8 Vestibule	Inside the Vestibule	The vestibule is not sealed from the furnace gases at the corners of the front waterwall tubes.	Need to order drawings from GE. Approximately 10 linear feet at each corner.	Verify that tube membrane is seal welded between front waterwall tube nos. 1 and 115 and the adjacent side waterwall tubes. Also, verify that plastic refractory, 18 gage, aluminized steel bent plates, and cast "D" refractory are installed per Section "AH-AH" on C-E Drawing No. E-660-612 and Section "M-M" on C-E Drawing No. E-660-615.			2	119-1 through 119-4
120	Headers RH-2 and SH-8 Vestibule	Casing at left end of Header SH-8	Bent flange on header guide, bent guide attached to frame of vestibule, and cracked casing	Crack is less than 6". Casing is specified as 12 gage, ASTM A-569.	Consider repairing and sealing the vestibule from ambient conditions.			2	120
121	Platform Support Steel	Adjacent to Downcomer No. 1 at Platform EL 47'-4"	Bent channel and I-beam.	Need to order drawings from GE. Channel specification: C 8 x 11.5, 11' long, A-36 material I-beam specification: 8 WF 17, 11'-1¼· A-36 material Channel specification: C 8 x 11.5, approx. 30" long, A-36 material Need to identify angles and number of bolts required. Bolts specifications: ⅞" diameter, high strength, friction type, A-325 material, with one nut and one plain hardened washer.	Replace the bent channels and I-beam adjacent to Downcomer No. 1. Loads on the platform should be limited until the bent channel and I-beam are replaced.			2 and 3	121-1, 121-2
122	Upper Steam-Cooled Spacer Tube	Header SH-3L to SH-6	The upper steam-cooled spacer tube has been plugged near Headers SH-3L and SH-6. The tube inside the boiler has completely deteriorated. Plant personnel reported that this tube failed near header SH-3L and was plugged after the failure.	Need to order drawings from GE. SC-1U through SC-7U and associated bars and lugs per Alstom Drawing Nos. 17767-4E9100 and 17767-4E9101.	The upper steam-cooled spacer tube maintains the alignment of the superheater intermediate assemblies and minimizes vibration of individual assemblies. Consider re-installing the upper steam-cooled spacer tube.			2	122-1 through 122-6
123	Headers SH-7 and SH-6 Vestibule	Inside the Vestibule	A few of the seal boxes appear to be empty. Some of the refractory installed between the seal boxes and the sidewalls of the vestibule is cracked and breaking up.	Need to order drawings from GE. Approximately 6 linear feet in each corner.	Monitor the condition of the seal at the front waterwall during future outages. Verify that the pressure parts and setting arrangements are installed per C-E Drawing Nos. E-660-612 and E-660-615.			2	123-1, 123-2, 123-3
124	Header SH-5 Vestibule	Inside the Vestibule	Floor casing at EL 129'-5⅞" is not secure.	47'-6" wide x 7'-11" deep	Safety precautions need to be taken when using the vestibule floor at EL 129'-5⅞". Clean off debris on top of casing. Secure loose and weakly supported casing. Reference C-E Drawing No. E-654-405.			1	124-1 through 124-5
125	Front Vestibule Skin Casing	Header SH-5 Drain Line	Failed expansion joint.	Qty. 1 of piece mark no. FFS-6 per C-E Drawing No. E-651-136. Qty. 1 of piece mark no. FFS-7 per C-E Drawing No. E-651-136. Qty. 1 of piece mark no. FFS-16 per C-E Drawing No. E-651-136.	Replace expansion joint assembly for Header SH-5 Drain Line.			2	125-1, 125-2, 125-3
126	Header SH-5 Vestibule	Inside the Vestibule	The vestibule is not sealed from the furnace gases at the corners of the front waterwall tubes.	Need to order drawings from GE. Approximately 10 linear feet at each corner.	Verify that tube membrane is seal welded between front waterwall tube nos. 1 and 115 and the adjacent side waterwall tubes. Also, verify that plastic refractory, 18 gage, aluminized steel bent plates, and cast "D" refractory are installed per Section "AH-AH" on C-E Drawing No. E-660-612 and Section "E-E" on C-E Drawing No. E-654-405.			2	126-1. 126-2, 126-3
127	Header SH-5 Vestibule	Inside the Vestibule	The seal box has been cut out at three tubes.	Approximately 6" x 12" at each tube.	Where gaps exist between the front waterwall tubes install peg fins to hold back the refractory. Coat the pressure parts with heavy coat of bitumastic or cup grease. Place ¼" thick cardboard against front waterwall tubes and pack the holes in the seal boxes with plastic refractory. After the plastic refractory is installed cover refractory with ¼" thick carboard and weld 13 gage, aluminized steel plates over the opening cut in the seal box. For original specifications reference C-E Drawing No. E-660-212.			2	127-1, 127-2, 127-3
128	Furnace Front Floor Tube Supports	At the left side waterwall inside the boiler lower front vestibule.	The furnace floor support beam at the bottom elevation of supports is buckled and the angle supporting the I-beam is buckled.	Need to order drawings from GE.	Install gusset plates between the flanges of the buckled I-beam and angle. After reviewing drawings consider installing scalloped plate between the left side waterwall tubes and the top side of the support angle.			2	128-1, 128-2, 128-3

129	Furnace Right Side Waterwall Supply Tube Support Hanger	Near the floor inside the lower front vestibule.	Fallen support hanger (reference Photo 129-1)	Need to order drawings from GE.	Reassemble the support hanger in its correct position. Reference the support hanger for the furnace left side waterwall supply tubes (Photo 129-2).			2	129-1, 129-2
130	Boiler Lower Front Vestibule Sidewall Insulation	At the sidewalls below the bifurcate tubes	Fallen insulaton	Approximately 100 ft^2 of insulation.	Install new insulation, plastic refractory and ¾" corrugated, aluminized steel per Section "X-X" on C-E Drawing No. E-654-406.			2	130-1, 130-2, 130-3
131	Furnace Bottom Skin Casing	Inside the boiler lower front vestibule	Water infiltration through the skin casing	Approximately 20 linear feet of seam welds. Casing is specified as 12 gage, ASTM A-569 material. Reference C-E Drawing No. E-649-725.	Clean the seam welds and repair the seam welds where perforations exist. At the sidewalls clean the skin casing of iron oxide and deposits to permit visual and ultrasonic thickness testing of the skin casing. Replace perforated casing with new casing.			2	131-1 through 131-6
132	Furnace Front Floor Tube Supports	At the right side waterwall inside the boiler lower rear vestibule.	The furnace floor support beam at the bottom elevation of supports is buckled and the angle supporting the I-beam is buckled.	Need to order drawings from GE.	Install gusset plates between the flanges of the buckled I-beam and angle. After reviewing drawings consider installing scalloped plate between the right side waterwall tubes and the top side of the support angle.			2	132-1, 132-2, 132-3
133	Furnace Front Floor Tube Supports	At the left side waterwall inside the boiler lower rear vestibule.	The angle supporting the I-beam at the bottom elevation furnace floor tube supports is buckled. The furnace floor support beam at the second elevation from the bottom is outside of its guides and is buckled. The angle supporting the I-beam at the second elevation from the bottom is buckled, too.	Need to order drawings from GE.	Install gusset plates between the flanges of the buckled I-beam and angles. Center the I-beams between the guides and after reviewing drawings consider installing scalloped plates between the left side waterwall tubes and the top side of the support angles.			2	133-1, 133-2, 133-3
134	Furnace Front Floor Tube Supports	Near the centerline of the furnace inside the boiler lower rear vestibule	The flanges of the furnace floor support beam at the second elevation from the bottom are buckled.	Need to order drawings from GE.	Install two pairs of gusset plates on each side of the buckled flanges.			2	134-1, 134-2
135	Tension Rod Assembly	Inside the boiler lower rear vestibule	Welding rod installed in place of bent pin.	Need to order drawings from GE.	Replace welding rod with bent pin.			2	135-1, 135-2, 135-3
136	Boiler Lower Rear Vestibule Sidewall Insulation	At the right side waterwall below the bifurcate tubes.	Fallen insulaton	Approximately 50 ft^2 of insulation.	Install new insulation, plastic refractory and ¾" corrugated, aluminized steel per Section "X-X" on C-E Drawing No. E-654-406.			2	136-1
137	Furnace Bottom Skin Casing	Inside the boiler rear front vestibule	Water infiltration through the casing at the sidewalls of the vestibule near the lower waterwall drum	Casing is specified as 12 gage, ASTM A-569 material. Reference C-E Drawing No. E-649-725.	Clean the skin casing of iron oxide and deposits to permit visual and ultrasonic thickness testing of the skin casing. Replace perforated casing with new casing.			2	137-1, 137-2
138	Seal Box and Access Door Refractory and Sootblower Lances	Between the SH and RH assemblies in the front convection pass	There are several blocks of loose refractory from seal boxes and access doors and pieces of failed sootblower lances lying onto top of and between tube assemblies.		For the safety of plant personnel loose refractory and broken sootblower lances in the front convection pass need to be removed before any other work inside the front convection pass or the furnace commences. Consider upgrading the sootblower lances to stainless steel material.			1 (removal of loose debris) 2 (upgrade sootblower lance material)	138-1 through 138-18
139	Boiler Roof Tubes	Above the front convection pass	A few roof tubes are sagging.	Need to request drawings from GE.	The roof tubes may fail due to out of service corrosion or overheating during unit operation if they are not returned to their proper position. Install scaffolding below the roof tubes to identify all the roof tubes that are sagging. Remove the skin casing above the roof tubes that are sagging. Repair the roof tube support assembly and lift the sagging roof tubes to their proper position. Cover the roof tubes with plastic refractory and skin casing.			1	139-1, 139-2, 139-3
140	Boiler Roof Tubes	Above the front convection pass	Stains and deposit patterns indicate that water has leaked through the roof tubes.		Perform a hydrostatic pressure test to verify that there are no tube leaks. Repair the skin casing in the penthouse and the weather roof above the penthouse. For more details reference Item 107.			2	140-1
141	RH Front Assemblies	Inside the front convection pass, between the RH assemblies and the SH upper assemblies	Sagging tubes	Need to order drawings from GE for support specifications. The bottom tubes are specified as; 2½" OD x 0.148" MWT, SA-213-TP304H 2½" OD x 0.148" MWT, SA-213-T22	Sagging tubes will not drain properly during shutdown, which could lead to internal corrosion. Sagging tubes may be more susceptable to sootblower erosion and, potentially, could interfere with the travel of the sootblower lances.			2	141-1, 141-2, 141-3
142	SH Front Upper Assemblies	Inside the front convection pass, between the RH assemblies and the SH upper assemblies	Failed support lugs and ties	Top tube specifications; 2½" OD x 0.340" MWT, SA-213-TP347H 2½" OD x 0.480" MWT, SA-213-T22 Qty. 200 of support plate, C-990-283, Style #10, material item 112 Qty. 25 of male flexible saddle, A-645-953, material item 234 Qty. 150 of female flex. saddle, A-990-341, material item 234 Qty. 150 of female flex. saddle, A-990-341-A, material item 234	Misaligned tubes will increase draft losses and reduce boiler efficiency. Sagging tubes may fail due excessive strain at tube supports or internal corrosion due to inability to drain during outages. Return misaligned and sagging tubes to their original position. Replace sections of tube circuits that will not return to their original position due to deformation. Reference C-E Drawing No. E-651-626 when ordering tube support materials. For tube material selection reference C-E Drawing Nos. E-651-626 and B-660-341.			2	142-1 through 142-12
143	Front Convection Pass Access Door	To the rear of Sootblower 7L	The access door seal box is missing refractory.	Need to order drawings from GE.	Replace missing refractory.			2	143-1, 143-2, 143-3
144	SH Front Upper Assemblies	Inside the front convection pass, between the SH upper and intermediate assemblies	A majority of the tube support plates have failed and many of the welds to the tube saddles have failed. Approximately 25% of the tube assemblies have misaligned and sagging tubes. Assemblies with misaligned and/or sagging tubes include 1, 2, 6, 8, 19, 29, 35, 39, 48, 54, 56, 59, 61, 66, 69, 72, 75, 77, 79, 85, 89, 91, 94, 100, 105, 106, 108, 111, and 112.	Tube specifications; 2¼" OD x 0.420" MWT, SA-213-T22 2¼" OD x 0.375" MWT, SA-213-T22 2¼" OD x 0.375" MWT, SA-213-T11 2¼" OD x 0.300" MWT, SA-213-T11 2¼" OD x 0.281" MWT, SA-213-T11 2¼" OD x 0.260" MWT, SA-213-T11 2¼" OD x 0.238" MWT, SA-213-T11 Qty. 1300 of support plate, C-990-283, Style #10, material item 112 Qty. 100 of tube saddle, A-645-952, material item 228	Misaligned tubes will increase draft losses and reduce boiler efficiency. Sagging tubes may interfere with sootblower operation and may fail due to sootblower erosion, overheating, excessive strain at tube supports, or internal corrosion due inability to drain. Return misaligned and sagging tubes to their original position. Replace sections of tube circuits that will not return to their original position due to deformation. Reference C-E Drawing No. E-651-626 when ordering tube support materials. For tube material selection reference C-E Drawing Nos. E-651-626 and B-660-341.			1	144-1 through 144-48
145	SH Front Intermediate Assemblies	Inside the front convection pass, between the SH upper and intermediate assemblies	The closed end of the female slip spacers on a few tubes have failed.	Need to order drawings from GE.	Consider installing stainless steel stops at the closed ends of the female slip spacers that have failed and are missing. Maintain spare slip spacers in the warehouse for future outages.			2	145-1, 145-2
146	SH Front Intermediate Assemblies	Inside the front convection pass, between the SH upper and intermediate assemblies	Minor abrasion on a few tubes from stops and adjacent tubes.	Minor wall less at multiple locations.	Inspect the SH front horizontal intermediate assemblies for abrasion during future outages.			2	146-1, 146-2, 146-3

147	SH Front Upper Assemblies	Inside the front convection pass, between the SH Intermediate and Platen assemblies	A couple of SH upper assemblies tubes are sagging below the SH intermediate assemblies.	Tube specifications; 2¼" OD x 0.375" MWT, SA-213-T22 2¼" OD x 0.300" MWT, SA-213-T11	SH upper assembly tubes sagging below the intermediate assemblies may overheat during unit operation. Return the sagging tubes to their original position. It may be necessary to replace these tubes.			1	147-1, 147-2, 147-3
148	Lower Steam-Cooled Spacer Tube	Inside the front convection pass, between the SH Intermediate and Platen assemblies	The steam-cooled spacer tube is bowed and most of the attachments to the hanger tubes have failed.	Piece mark no. SC-6L per Alstom Drawing No. 17767-4E9099 and associated spacer lugs, including piece mark nos. SL-1, GS-1, and B-1 per Alstom Drawing No. 17767-4E9101.	Consider replacing the bowed section of the steam-cooled spacer tube.			2	148-1, 148-2, 148-3
149	SH Front Platen and Rear Waterwall Tubes	At the rear bends of the SH Front Platen Assemblies	Abrasion between the SH Front Platen Tubes and the Rear Waterwall Tubes	More detailed inspection would be required to identify potential damage.	Perform visual examinations of the abrasion between the SH platen tubes and the rear waterwall tubes. If there is significant wall loss then perform ultrasonic thickness examination of the worn areas. Currently, there is no access to the rear waterwall tubes at the SH front platen assemblies elevation. Consider installing scaffolding or skyclimbers to access this area.			2	149-1, 149-2, 149-3
150	SH Front Platen and Left Side Waterwall Tubes	Inside the front convection pass, between the SH Intermediate and Platen assemblies	At least three SH platen tubes and two sidewall tubes have dents and/or gouges.	Small dents and shallow gouges.	It is unlikely that these dents or gouges would lead to tube failures. Consider installing scaffolding below the SH platen assemblies to allow a more detailed inspection of the assemblies and sidewall tubes.			2	149-1 through 149-5
151	Sootblower Lances, Steam-Cooled Spacer Tube, Lugs, and Refractory	Inside the furnace	Loose debris has accumulated on the floor tubes of the furnace.		Before allowing any workers in the furnace, remove loose debris that has accumulated between the SH and the RH assemblies above the furnace. Remove the debris that has accumulated at the bottom of the furnace before returning the unit to service.			2	151-1 through 151-12
152	Gas Distribution Baffles	Inside the rear convection pass, above the RH upper assemblies	The vertical section of the refractory gas distribution baffles above the RH rear upper assemblies have failed.	Approximately 5 linear feet of baffles.	Replace the failed baffles with new baffles. To install refractory gas distribution baffles reference C-E Drawing No. E-654-169.			2	152-1, 152-2
153	RH Rear Upper Assemblies	Inside the rear convection pass, above the RH upper assemblies	One of the reheater tubes near the path of travel of Sootblower 10R lance is dented.	The depth of the dent is perhaps 25% of the diameter of the tube.	Typically, dents do not cause a significant flow restriction through the tube unless the dent is greater than 50% of the diameter of the tube. A failed sootblower lance may have caused this dent. Routinely inspect the sootblower lances during unit operation and remove any lances from service that have significant wall loss or cracked welds.			2	153-1, 153-2, 153-3
154	RH Rear Upper Assemblies	Inside the rear convection pass, at the bottom of the RH upper assemblies	At least a couple of the bumper stop plates at the front (baffle) waterwall and the bottom front bends of the RH upper assemblies are missing.	Qty. 2 of piece mark no. SP-1 per C-E Drawing No. F-634-847. Qty. 2 of bumper lugs, B-914-344, and associated bolts per C-E Drawing No. F-634-847.	The bumper lugs may gouge the tubes if the bumper stop plates are missing. Replace the missing stop plates. It would be necessary to cut access openings in the anti-vibration baffles to access the front (baffle) waterwall.			2	154-1, 154-2
155	Gas Distribution Baffles	Inside the rear convection pass, above the RH intermediate assemblies	Most of the refractory gas distribution baffles at the front (baffle) waterwall are resting on top of the reheater tubes and sagging. At small section of the baffles is missing.	Approximately 2' of baffle is missing. The length of the gas distribution baffle at the front (baffle) waterwall is 47'-6".	Consider replacing the gas distribution baffle at the front (baffle) waterwall. The gas distribution baffle should be supported from the waterwall. There should be at least ½" gap between the bottom of the gas distribution baffles and the top of the tubes. It would be necessary to cut access openings in the anti-vibration baffles to access the front (baffle) waterwall.			2	155-1, 155-2, 155-3
156	Gas Distribution Baffles	Inside the rear convection pass, above the RH intermediate assemblies	Some of the refractory for the gas distribution baffle at the left steam cooled sidewall is broken and missing.	Approximately 6 linear feet of broken and missing refractory.	Replace the broken and missing refractory. Reference C-E Drawing No. E-654-169. It would be necessary to cut access openings in the anti-vibration baffles to access the front (baffle) waterwall.			2	156-1, 156-2
157	Gas Distribution Baffles	Inside the rear convection pass, above the RH intermediate assemblies	Some of the refractory for the gas distribution baffle at the right steam-cooled sidewall is broken and missing. A 4-foot section of the baffle is suspended by a few rods.	Approximately 8 linear feet of broken and missing refractory.	Remove the suspended refractory before allowing anyone to enter the access doors at the right sidewall below the RH intermediate assemblies. Replace the broken and missing refractory. Reference C-E Drawing No. E-654-169. It would be necessary to cut access openings in the anti-vibration baffles to access the front (baffle) waterwall.			1 (removal of suspended and loose refractory) 2 (installation of gas distribution baffles)	157-1 through 157-5
158	RH Rear Upper and Intermediate Assemblies	Inside the rear convection pass, between the RH upper and intermediate assemblies	Two U-rods from the spacer bar assemblies were found loose.	Two 1/2" diameter U-rods per Details "TB" and "TC" on C-E Drawing No. F-634-847 (piece mark no. IT-66150 Style 31).	Reinstall the U-rods at their proper location.			2	158-1, 158-2
159	Gas Distribution Baffles	Inside the rear convection pass, above the RH lower assemblies	Most of the refractory gas distribution baffles at the front (baffle) waterwall are resting on top of the reheater tubes and sagging.	The length of the gas distribution baffle at the front (baffle) waterwall is 47'-6".	Consider replacing the gas distribution baffle at the front (baffle) waterwall. The gas distribution baffle should be supported from the waterwall. There should be at least ½" gap between the bottom of the gas distribution baffles and the top of the tubes. It would be necessary to cut access openings in the anti-vibration baffles to access the front (baffle) waterwall.			2	159-1 through 159-6
160	Gas Distribution Baffles	Inside the rear convection pass, above the RH lower assemblies	The refractory gas distribution baffle at the right side steam-cooled wall tubes is broken from the access door to the front (baffle) waterwall.	Approximately 8 linear feet of broken and missing refractory.	Replace the broken and missing refractory. Reference C-E Drawing No. E-654-169. It would be necessary to cut access openings in the anti-vibration baffles to access the front (baffle) waterwall.			2	160-1, 160-2, 160-3
161	RH Rear Lower Assemblies	Inside the rear convection pass, at the rear convection pass rear wall	Fallen bumper stop plates	Stop plate dimensions are 12" x 4" x ¼", however, specifications for the stop plate on the drawing are given below. Qty. 4 of piece mark "SP-2" per CE Drawing No. F-634-847, specified as ¾" thick plate fabricated from A-167 type 309 material. Qty. 4 of bumper lug, B-914-344, with bolt per CE Drawing No. F-634-847.	The bumper assembly where the stop plate was located could gouge the rear convection pass wall tubes. Reinstall or replace the missing bumper assemblies and bumper stop plates to their original locations. It would be necessary to cut temporary openings in the anti-vibration baffles to access the rear wall tubes. It may be necessary to cut openings in the rear wall to weld the bumper lugs to the reheater tubes.			2	161-1, 161-2, 161-3
162	RH Rear Lower Assemblies	Inside the rear convection pass, at the rear convection pass front wall	Fallen bumper stop plates	Stop plate dimensions are 6½" x 4" x ¾", however, specifications for the stop plate on the drawing are given below. Qty. 10 of piece mark "SP-1" per CE Drawing No. F-634-847, specified as ¾" thick plate fabricated from A-167 type 309 material. Qty. 5 of bumper lug, B-914-344-M, with bolt per CE Drawing No. F-634-847.	The bumper assembly where the stop plate was located could gouge the rear convection pass wall tubes. Reinstall or replace the missing bumper assemblies and bumper stop plates to their original locations. It would be necessary to cut temporary openings in the anti-vibration baffles to access the rear wall tubes. It may be necessary to cut openings in the rear wall to weld the bumper lugs to the reheater tubes.			2	162-1 through 162-7
163	Anti-Vibration Baffles	Inside the rear convection pass, above the economizer front intermediate header (EH-2A)	Buckled channels supporting the anti-vibration baffles	Qty. 4 of bent plate channel, piece mark no. P-4 per C-E Drawing No. E-654-962 Dimensions: 16 3/16" high x 3" wide x ¼" thick x 1'-1¾" long Original Material: Corten Grade "A" Plate	Replace the bent plate channels with new channels that are reinforced with gusset plates.			2	163-1, 163-2, 163-3

				Material: May have been upgraded to SA-387-22 plate. Need to verify with parts.					
164	Anti-Vibration Baffles	Inside the rear convection pass, above the economizer assemblies	Fallen anti-vibration baffle support bars	Plate bar, piece mark no. B-1 per C-E Drawing No. E-654-962 Dimensions: 6" long x 1½" wide x ½" thick Original Material: SA-387-B plate Material: May have been upgraded to SA-387-22 plate. Need to verify with parts.	Save the fallen bars. Reinstall the support bars in empty slots in the anti-vibration baffles. Reference C-E Drawing No. E-654-962.			2	164-1, 164-2
165	Sootblower 13L	Inside the rear convection pass, above the economizer assemblies	Sootblower lance is advanced inside the rear convection pass.		Retract the sootblower. Test the sootblower and verify that it is working properly.			2	165-1
166	Economizer Hopper Supports	Inside the left economizer outlet duct	Two of the diagonal pipe truss members, nos. 1L and 5L, supporting the left economizer hopper have failed.	Need to order drawings from GE for pipe truss specifications.	Need to install scaffolding to perform detailed inspection and repairs.			2	166-1, 166-2
167	Economizer Hopper Supports	Inside the right economizer outlet duct	Two of the diagonal pipe truss members, nos. 1R and 2R, supporting the right economizer hopper have failed.	Need to order drawings from GE for pipe truss specifications.	Need to install scaffolding to perform detailed inspection and repairs.			2	167-1, 167-2, 167-3
168	Economizer to Air Heater 6-1 Flue Duct	At the first expansion joint downstream of the left economizer hopper	Crack in the expansion joint near the upper, left corner of the joint.	Need scaffolding to access the indication for detailed inspection and repairs. Need to order drawings from GE. Expansion joint is probably fabricated from stainless steel 316L material. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Drill each end of the crack (to relieve stresses), clean the surfaces to be welded then seal weld the crack. Use inconel electrodes to repair the expansion joint.			2	168-1, 168-2
169	Economizer to Air Heater 6-1 Flue Duct	At the second expansion joint downstream of the left economizer hopper	Crack in the expansion joint near the upper, right corner of the joint.	Need scaffolding to access the indication for detailed inspection and repairs. Need to order drawings from GE. Expansion joint is probably fabricated from stainless steel 316L material. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Drill each end of the crack (to relieve stresses), clean the surfaces to be welded then seal weld the crack. Use inconel electrodes to repair the expansion joint.			2	169-1, 169-2
170	Economizer to Air Heater 6-1 Flue Duct	At the second expansion joint downstream of the left economizer hopper	Crack in the expansion joint at the floor of the duct.	Approximately 2" long. Need to order drawings from GE. Expansion joint is probably fabricated from stainless steel 316L material. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Drill each end of the crack (to relieve stresses), clean the surfaces to be welded then seal weld the crack. Use inconel electrodes to repair the expansion joint.			2	170-1, 170-2
171	Economizer to Air Heater 6-2 Flue Duct	At the first expansion joint downstream of the right economizer hopper	Crack in the expansion joint near the upper, right corner of the joint.	Need scaffolding to access the indication for detailed inspection and repairs. Need to order drawings from GE. Expansion joint is probably fabricated from stainless steel 316L material. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Drill each end of the crack (to relieve stresses), clean the surfaces to be welded then seal weld the crack. Use inconel electrodes to repair the expansion joint.			2	171-1, 171-2
172	Economizer to Air Heater 6-2 Flue Duct	At the second expansion joint downstream of the left economizer hopper	Crack in the expansion joint near the upper, left corner of the joint.	Need scaffolding to access the indication for detailed inspection and repairs. Need to order drawings from GE. Expansion joint is probably fabricated from stainless steel 316L material. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Drill each end of the crack (to relieve stresses), clean the surfaces to be welded then seal weld the crack. Before installing a patch over the crack, measure the wall thickness of the expansion joint to determine the gage of the patch. Use inconel electrodes to repair the expansion joint.			2	172-1, 172-2
173	Economizer to Air Heater 6-2 Flue Duct	At the second expansion joint downstream of the left economizer hopper	Cracks in the upper and the lower folds of the expansion joint.	Need scaffolding to access the indication for detailed inspection and repairs. Need to order drawings from GE. Expansion joint is probably fabricated from stainless steel 316L material. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Drill each end of the crack (to relieve stresses), clean the surfaces to be welded then seal weld the crack. Before installing a patch over the crack, measure the wall thickness of the expansion joint to determine the gage of the patch. Use inconel electrodes to repair the expansion joint.			2	173-1, 173-2, 173-3
174	Economizer to Air Heater 6-2 Flue Duct	Between the first and the second expansion joints downstream of the economizer hopper	Indications of water infiltration	Infiltration appers to be occurring around the instrument ports. Duct material is probably specified as 1/4" hot rolled, weldable, copper bearing carbon steel.	Remove the insulation and lagging on top of the flue duct, inspect the flue duct and ports for cracks and perforations. Measure the remaining wall thickness of the flue duct if there is significant corrosion. Replace the casing if there is less than 50% remaining wall thickness. Weld repair cracks in instrument port welds to the flue duct.			2	174-1, 174-2, 174-3
175	Air Heater 6-1	Hot end (bottom side), gas inlet	Cannot determine		Install scaffolding to access the hot end, gas inlet side of the air heater to allow a detailed inspection of the air heater.			2	175-1, 175-2
176	Air Heater 6-2	Hot end (bottom side), gas inlet	Cannot determine		Install scaffolding to access the hot end, gas inlet side of the air heater to allow a detailed inspection of the air heater.			2	176-1, 176-2, 176-3
177	Air Heater 6-1	Cold end (top side), gas outlet	Cracks in the upper housing adjacent to the pipe struts	Two cracks 2 to 3 inches long, each.	Drill a hole at the end of each crack and weld repair. For material specifications consult with the original equipment manufacturer (ARVOS Group - LJUNGSTRÖM Division).			2	177-1, 177-2, 177-3
178	Air Heater 6-1	Cold end (top side), gas outlet	Corrosion of and water infiltration in the upper center section	Mostly in a 12 ft^2 area near the rotor post.	Need to perform a condition assessment of the center section. Perform an ultrasonic thickness test survey and consult the original equipment manufacturer (ARVOS Group - LJUNGSTRÖM Division) for recommendations.			2	178-1 through 178-5
179	Air Heater 6-1	Cold end (top side), gas outlet	Deposits covering the basket heating elements		Consider water washing the air heater before returning it to service.			2	179-1, 179-2, 179-3
180	Air Heater 6-2	Cold end (top side), gas outlet	Sootblower lance is fully advanced and is sagging.		The cleaning effectiveness of the sootblower is reduced if it is not kept parallel with the heating elements in the baskets. Provide support for the sootblower lance for its full range of travel. Test the sootblower and verify that it is working properly.			2	180-1, 180-2
181	Air Heater 6-2	Cold end (top side), gas outlet	Cracked welds adjacent to the pipe struts at the upper housing and the upper center section.	At least two cracks totalling at least 8" in length.	Ground out the cracks and reweld. For material specifications consult with the original equipment manufacturer (ARVOS Group - LJUNGSTRÖM Division).			2	181-1 through 181-5
182	Air Heater 6-2	Cold end (top side), gas outlet	Missing approximately three leafs of circumferential seals Air infiltration at perforations in the upper housing	Approximately three leafs Less than 2 ft^2.	Replace the section of circumferential seals with missing leafs. Measure the remaining wall thickness around the perforations. Install plates over the perforations and corroded casing and seal weld.			2	182-1, 182-2, 182-3
183	Induced Draft Fan 6-1	Shaft seal, bearing end	Damaged seal and gouge in shaft	Item no. 9 per Plate I in the Westinghouse instruction manual.	Access the condition of the shaft by performing magnetic particle tests and phased array ultrasonic shearwave tests. Measure the depth of the gouge in the shaft. Perform an engineer review of the data. Replace the shaft seals.			1	183-1, 183-2, 183-3
184	Induced Draft Fan 6-1	Vane control cover at left intake	The seal ring is not sealing the vane control cover and there are holes in the base material of the cone.	Item nos. 1, 2, 5 per Plate I in the Westinghouse instruction manual.	Consider replacing the vane control cover and base casting to improve the seal and minimize air infiltration. Seal weld patches over the holes in the cone or replace the cone. Consult with a fan representative for material specifications.			2	184-1, 184-2, 184-3

185	Induced Draft Fan 6-1	Vane control drive shaft	Air infiltration where the vane control drive shaft enters the intake duct.		Install a packing gland and packing around the shaft where it enters the intake duct.			2	185-1, 185-2
186	Induced Draft Fan 6-1	Left intake	The expansion joint at the inlet of the left intake is full of debris.		Debris may prevent the expansion joint from compressing during unit operation. Clean out the debris in the expansion joint.			2	186-1
187	Induced Draft Fan 6-1	Right intake	The vane control cover seal ring failed.	Item no. 5 per Plate I in the Westinghouse instruction manual.	Replace the vane control cover seal ring.			2	187-1, 187-2, 187-3
188	Induced Draft Fan 6-1	Right intake	The housing appears to be concaved where the vane control drive shaft penetrates the casing.	Approximately 2 foot diameter area.	Replace the casing around the shaft. Access the condition of the bearing and packing gland. Inspect the control vane drive shaft and verify that it is properly aligned and is the correct length.			1	188-1, 188-2
189	Induced Draft Fan 6-1	Right intake	Erosion of pipe strut.	Need drawings from the original equipment manufacturer.	Replace the pipe strut. Consider installing a shield on the upstream side of the pipe strut to protect it from erosion.			2	189-1, 189-2
190	Induced Draft Fan 6-1	Right intake	The expansion joint at the inlet of the right intake is full of debris.		Debris may prevent the expansion joint from compressing during unit operation. Clean out the debris in the expansion joint.			2	190-1, 190-2
191	Air Heater to ID Fan 6-1 Flue Duct	Inside flue duct	One of the pipe struts in the flue duct appears to be bowed.		Install scaffolding inside the flue duct to permit detailed inspections inside the flue duct.			2	191-1
192	ID Fan to Stack 6-1 Flue Duct	Inside flue duct	There appears to be some damage between the two expansion joints.		Install scaffolding inside the fan housing and discharge duct to permit detailed inspections inside the flue duct.			2	192-1, 192-2, 192-3
193	Stack 6-1 Liner	Inside the stack	The refractory liner is coated with soot.	The entire stack lining.	The soot may increase particulate emissions during unit operation. Consider waterwashing the stack liner.			2	193-1, 193-2, 193-3
194	Induced Draft Fan 6-2	Top of motor foundation	Cracks in the foundation and deflection of the motor base frame	Estimated at approximately 15 $ft.^2$ area of concrete. Some of the cracks are under the motor and are not visible.	A civil engineer should inspect the foundation and provide recommendations.			2	194-1 through 194-6
195	Induced Draft Fan 6-2	Left intake	The seal ring is not sealing the vane control cover.	Item nos. 1, 2, 5 per Plate I in the Westinghouse instruction manual.	Disassemble the seal ring and inspect the vane control cover and base casting to determine why the seal ring is not sealing.			2	195-1
196	Induced Draft Fan 6-2	Left intake	A clevis pin for the vane control drive link is missing a cotter pin.	Need to measure clevis pin.	Replace the missing cotter pin. Scaffolding would be necessary to safely access the clevis pin.			1	196-1, 196-2
197	Induced Draft Fan 6-2	Left intake	The housing appears to be concaved where the vane control drive shaft penetrates the casing.	Approximately 18" in diameter.	Replace the casing around the shaft. Access the condition of the bearing and packing gland. Inspect the control vane drive shaft and verify that it is properly aligned and is the correct length.			2	197-1, 197-2, 197-3
198	Induced Draft Fan 6-2	Left intake	The expansion joint at the inlet of the left intake is full of debris.		Debris may prevent the expansion joint from compressing during unit operation. Clean out the debris in the expansion joint.			2	198-1, 198-2, 198-3
199	Induced Draft Fan 6-2	Right intake	The housing appears to be concaved where the vane control drive shaft penetrates the casing.	Approximately 2' in diameter.	Replace the casing around the shaft. Access the condition of the bearing and packing gland. Inspect the control vane drive shaft and verify that it is properly aligned and is the correct length.			1	199-1, 199-2
200	Induced Draft Fan 6-2	Right intake	The expansion joint at the inlet of the left intake is full of debris.		Debris may prevent the expansion joint from compressing during unit operation. Clean out the debris in the expansion joint.			2	200-1, 200-2, 200-3
201	Induced Draft Fan 6-2	Right intake	The seal ring does not completely cover the opening for the vane control lever.	Approximately 2' x ¼" opening on each side of the seal ring.	Disassemble the seal ring and inspect the vane control cover and base casting to determine why the seal ring is not sealing.			2	201-1, 201-2
202	ID Fan to Stack 6-2 Flue Duct	Inside flue duct	There appears to be some damage between the two expansion joints.		Install scaffolding inside the fan housing and discharge duct to permit detailed inspections inside the flue duct.			2	202-1, 202-2
203	Stack 6-2 Liner	Inside the stack	The refractory liner is coated with soot.	The entire stack lining.	The soot may increase particulate emissions during unit operation. Consider waterwashing the stack liner.			2	203-1 through 203-6
204	Forced Draft Fan 6-1	Inlet cones	The overlap between the inlet cones and the fan wheel appears to be less than specified on the OEM drawing.		Measure the overlap and clearances between the inlet cones and fan wheel at several locations. Rotate the fan wheel as measurements are taken. Determine the minimum, maximum, and average measurements of overlap and clearance. Reference Westinghouse drawing no. 636F209 and Figure 4 in the Westinghouse instruction manual. Consult a fan specialist for recommendations.			2	204-1 through 204-6
205	Forced Draft Fan 6-1	Inside the fan housing	Hole in inlet cone.	Approximately 6" x 1".	Reinspect the fan to verify the location of hole. Remove the shaved metal that has been peeled back. If the hole is in the inlet cone then test and observe the operation of the vanes. Verify if there is any interferance between the vanes and the inlet cone. After verify that there is no interference between the vanes and the inlet cone then install a patch over the hole and seal weld.			1	205-1
206	Forced Draft Fan 6-2	Shaft seal, motor end	Damaged seal and stop plate.	Item nos. 8 and 9 per Plate I in the Westinghouse instruction manual.	Replace the shaft seal and stop plate.			2	206-1 through 206-4
207	Forced Draft Fan 6-2	Housing around the fan intakes	Holes in the roof of the housing adjacent to the steam coils.	Approximately 80 ft^2.	Replace the roof of the housing.			2	207-1, 207-2
208	Forced Draft Fan 6-2	Housing around the fan intakes	Holes in the casing near the floor of the housing.	Approximately 10 ft^2.	Replace the corroded casing.			2	208-1, 208-2, 208-3
209	Forced Draft Fan 6-2	Rear Intake	There is a significant gap between the inlet flare and the frame of the front inlet box. There are very corroded plates/shims and bolts between the inlet flare and the frame of the inlet box.	Need to reference fan drawings or measure.	Consider removing the inlet flare, cleaning and inspecting the surfaces of the inlet flare and the flange of the inlet box. May need assistance of fan representative for reassembly of the inlet flare to the inlet box.			2	209-1, 209-2
210	Forced Draft Fan 6-2	Rear Intake	The instrument tubing for the impact suction tube has failed or disconnected.	Approx. ¼" stainless steel instrument tubing.	Reconnect or replace the failed tubing if it is used for control, feedback, or indication. Before the gas conversion the combustion airfoils were used for airflow control.			1 (if instrument is used for control or feedback) 2 (if instrument is used for indication)	210-1
211	Forced Draft Fan 6-2	Shutoff Damper Actuator	The fan discharge shutoff damper actuator is missing.		Install a damper actuator and verify that it is functioning properly before returning the unit to service.			1	211-1, 211-2
212	Forced Draft Fan 6-2	Inlet cones	The gap between the inlet cones and the fan wheel appears to be greater than specified on the OEM drawing.		Measure the overlap and clearances between the inlet cones and fan wheel at several locations. Rotate the fan wheel as measurements are taken. Determine the minimum, maximum, and average measurements of overlap and clearance. Reference Westinghouse drawing no. 636F209 and Figure 4 in the Westinghouse instruction manual. Consult a fan specialist for recommendations.			2	212-1 through 212-6
213	Cold Air Duct to Air Heater 6-1	Above Air Heater 6-1	Buckled pipe strut	Need to order drawings from GE.	Provide access to the cold air duct above Air Heater 6-1. May need to install scaffolding to access the cold air duct.			2	213-1
214	Air Heater 6-1	Cold end (top side), air inlet	Crack in upper housing adjacent to a pipe strut.	Approximately 3" long.	Drill a hole at the end of each crack and weld repair. For material specifications consult with the original equipment manufacturer (ARVOS Group - LJUNGSTRÖM Division).			2	214-1, 214-2, 214-3

215	Air Heater 6-1	Cold end (top side), air inlet	Polishing of the top edge of the by-pass seal ring (T-bar).		The radial sector plates are set too low. Raise the radial sector plates until there is at least 1" clearance between the top edge of the by-pass seal ring and the sector plates. The specified clearance in the Air Preheater instruction manual for the radial seals at the by-pass seal ring is ¾".			1	215-1, 215-2
216	Cold Air Duct to Air Heater 6-2	Above Air Heater 6-2	Buckled pipe struts	Need to order drawings from GE.	Provide access to the cold air duct above Air Heater 6-1. Install scaffolding inside the air heater to access the pipe strut above the expansion joint. May need to install scaffolding to access the cold air duct.			2	216-1, 216-2
217	Air Heater 6-2	Cold end (top side), air inlet	The radial seal are eroded below the height of the by-pass seal ring (T-bar). There is a gap between the rotor diaphragm and the angle supporting the by-pass seal ring (T-bar) at one of the radial seals.	The gap between the rotor diaphragm and the angle supporting the by-pass seal ring is approximately 1 foot long.	Dye penetrant test the stitch weld in the middle of the gap between the rotor diaphragm and the angle supporting the by-pass seal ring (T-bar). Weld repair if necessary. Add additional stitch welds to each side of the existing stitch weld to close the gap.			2	217-1, 217-2, 217-3
					The radial sector plates are set too low. Raise the radial sector plates until there is at least 1" clearance between the top edge of the by-pass seal ring and the sector plates. The specified clearance in the Air Preheater instruction manual for the radial seals at the by-pass seal ring is ¾".			1	
218	Air Heater 6-2	Cold end (top side), air inlet	Some of the by-pass (circumferential) seals are damaged.	At least three locations, 2 feet long each.	Consider replacing the damaged by-pass seals.			2	218-1, 218-2, 218-3
219	Air Heater 6-1 and Hot Air Duct	Hot end (bottom side), air outlet and inside the hot air duct	Buckled pipe struts in the hot air duct below the air heater.	Need to order drawings from GE.	Install scaffolding inside the air duct to access the pipe struts and the bottom side of the air heater. Inspect the air outlet side of the air heater.			2	219-1
220	Hot Air Duct 6-1	Inside the hot air duct	Debris inside the folds of the first expansion joint downstream of the air heater, air outlet hopper.		Debris may prevent the expansion joint from compressing during unit operation. Clean out the debris in the expansion joint.			2	220-1
221	Burner Connecting Duct 6-1	The top, left corner of the burner connecting duct	Indications of water infiltration in the top, left corner of the first expansion joint upstream of the burner connecting duct.	Unknown at this time.	Install scaffolding to access the area at the source of the leak. To inspect from the external side of the duct remove the insulation and lagging covering the top, left corner of the expansion joint.			2	221-1, 221-2
222	Burner Connecting Duct 6-1	The top, left corner of the burner connecting duct	Indications of water infiltration in the top, left corner of the duct above the rear horizontal pipe struts at buckstay EL 97'-10".	Unknown at this time.	Install scaffolding to access the area at the source of the leak. To inspect from the external side of the duct remove the insulation and lagging covering the top, left corner of the duct near the rear of the furnace.			2	222-1, 222-2
223	Air Heater 6-2	Hot end (bottom side), air outlet	Not inspected.		Provide safe access to the bottom side of the air heater to permit detailed inspections.			2	223-1
224	Hot Air Duct 6-2	Above Air Heater 6-2 air outlet hopper	Appears to be a crack in the front, left corner of the duct.	Approximately 1' x ½". Need to order drawings from GE. Casing is probably specified as ¼" thick, hot rolled, weldable, copper bearing, carbon steel plate.	Install scaffolding to access the indication for detailed inspections. If the indication is a crack then consider sealing the crack with bent plate material.			2	224-1, 224-2, 224-3
225	Hot Air Duct 6-2	Inside the hot air duct	Cracks in the first expansion joint downstream of Air Heater 6-2 air outlet hopper.	Approximately 4" x 12" area in the folds of the expansion joint. It appears that the material of the bottom of the expansion joint was upgraded to stainless steel. Need to order drawings from GE and review past orders for parts.	Grind out the cracks and grind flush the weld material around the cracks. Seal weld the cracks with inconel electodes or install stainless steel sheets over cracks and seal weld with inconel electrodes. Measure the wall thickness of the expansion joints to determine the gage of the material, otherwise use 14 gage sheets for patches.			2	225-1, 225-2
226	Burner Connecting Duct 6-2	The roof of the burner connecting duct adjacent to the furnace right side waterwall.	Indications of water infiltration in the top, left corner of the duct at the rear of the furnace right side waterwall.	Unknown at this time.	Remove insulation and lagging covering the roof of the burner connecting duct adjacent to the furnace right side waterwall near the rear corner. Inspect the casing and the scallop bar for cracks and perforation. Consider installing scaffolding inside the burner connecting duct to inspect and repair the casing and scallop bars.			2	226-1, 226-2
227	Burner Connecting Duct 6-2	The top, right corner of the burner connecting duct	Indications of water infiltration in the top, right corner of the duct above the rear horizontal pipe struts at buckstay EL 97'-10".	Unknown at this time.	Install scaffolding to access the area at the source of the leak. To inspect from the external side of the duct remove the insulation and lagging covering the top, left corner of the duct near the rear of the furnace.			2	227-1
228	Burner Connecting Duct 6-2	Inside the hot air duct at buckstay EL 89'3"	Cracks in the upper, left corner of the expansion joint at the front wall of the burner connecting duct at buckstay EL 89'-3"	Multiple cracks totalling approximately 6" in length.	Ground out the cracks and seal weld with inconel electrodes.			2	228-1, 228-2
229	Burner Connecting Duct 6-1	The bottom, right corner of the burner connecting duct	Crack at the bottom of the first expansion joint upstream of the main windbox in the front, left corner of the furnace (Corner B).	Approximately 4" long. Need to order drawings from GE. Casing is probably specified as ¼" thick, hot rolled, weldable, copper bearing, carbon steel material. Scallop bar is probably specified as ¼" thick, A-36 material.	Clean out the debris, prepare the surface around the crack for welding. Seal weld the crack with inconel if the crack is in stainless steel material.			2	229-1, 229-2, 229-3
230	Burner Connecting Duct 6-1	The bottom, right corner of the burner connecting duct	Crack in the floor of the burner connecting duct adjacent to the rear vertical truss.	Approximately 3" x 2". Need to order drawings from GE. Casing is probably specified as ¼" thick, hot rolled, weldable, copper bearing, carbon steel material.	Clean the surface of the cracks. Install a plate over the cracks and seal weld.			2	230-1, 230-2
231	Burner Connecting Duct 6-1	Floor of the burner connecting duct	Debris inside the fold of the first expansion upstream of the main windbox in the front, left corner of the furnace (Corner B).		Debris may prevent the expansion joint from compressing during unit operation. Clean out the debris in the expansion joint.			2	231-1
232	Main Windboxes	The main windboxes inside Burner Connecting Duct 6-1	The flanges of the main windboxes in the left burner connecting duct is separating from the seal bar at the pressure part openings.	Bottom 4 to 5 feet of the main windboxes.	Inspect the flanges of the main windboxes each outage. Plan to replace the windboxes when the separation exceeds ½".			2	232-1, 232-2
233	Burner Connecting Duct 6-2	Inside the burner connecting duct	The upper attachment weld of the rear "C" plate at horizontal truss EL 65'-9¼" has failed.	Approximately $1\frac{3}{16}$" long. Need to order drawings from GE. "C" plate is probably specified as ¼" thick, A-36 plate.	Prepare the surface of the "C" plate and the casing. Reweld the "C" plate to the casing with ¼" fillet weld on each side of the plate. Weld with 7018 electrode.			2	233-1, 233-2
234	Burner Connecting Duct 6-2	Floor of the burner connecting duct	Crack at the bottom of the first expansion joint upstream of the main windbox in the rear, right corner of the furnace (Corner D).	Multiple cracks totalling approximately 12" in length. Need to order drawings from GE. Casing is probably specified as ¼" thick, hot rolled, weldable, copper bearing, carbon steel material. Scallop bar is probably specified as ¼" thick, A-36 material.	Clean out the debris, prepare the surface around the crack for welding. Seal weld the crack with inconel if the crack is in stainless steel material.			2	234-1, 234-2
235									