

Appendix B08: Index To Fossil-Steam Unit Cause Codes

FOSSIL-STEAM UNITS

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BALANCE OF PLANT

TABLE B08-1 Balance of Plant: Auxiliary Systems - Auxiliary Steam					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3830	Auxiliary boiler
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3831	Auxiliary steam piping

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Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3832	Auxiliary steam valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3833	Auxiliary steam controls and instruments
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3834	Auxiliary boiler tube leaks
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3835	Auxiliary boiler burner management system
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3836	Steam transfer to other unit
Fossil-Steam	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3839	Other auxiliary steam problems (also see extraction steam codes 3520 to 3529; startup bypass codes 0630 to 0660; and soot blower steam code 0870)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-2 Balance of Plant: Auxiliary Systems - Closed Cooling Water Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3820	Closed cooling water pumps and motors
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3821	Closed cooling water piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3822	Closed cooling water valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3823	Closed cooling water heat exchangers
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3824	Closed cooling water system fouling
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3825	Closed cooling water instrumentation
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3826	Closed cooling water strainer
Fossil-Steam	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3829	Other closed cooling water system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-3 Balance of Plant: Auxiliary Systems - Fire Protection System

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Fire Protection System	3860	Fire protection system pumps
Fossil-Steam	Balance of Plant	Auxiliary Systems	Fire Protection System	3861	Fire protection system piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Fire Protection System	3862	Fire protection system valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Fire Protection System	3863	Fire protection system fouling
Fossil-Steam	Balance of Plant	Auxiliary Systems	Fire Protection System	3864	Fire protection system instrumentation and controls
Fossil-Steam	Balance of Plant	Auxiliary Systems	Fire Protection System	3869	Other fire protection system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-4 Balance of Plant: Auxiliary Systems - Instrument Air

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Instrument Air	3850	Instrument air compressors
Fossil-Steam	Balance of Plant	Auxiliary Systems	Instrument Air	3851	Instrument air piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Instrument Air	3852	Instrument air valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Instrument Air	3853	Instrument air dryers
Fossil-Steam	Balance of Plant	Auxiliary Systems	Instrument Air	3854	N2 backup to instrument air
Fossil-Steam	Balance of Plant	Auxiliary Systems	Instrument Air	3859	Other instrument air problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-5 Balance of Plant: Auxiliary Systems - Low-pressure Gas Compression System

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3870	Fuel Gas Compressor and Motors

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Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3871	Fuel Gas Compressor Piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3872	Fuel Gas Compressor Valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3873	Fuel Gas Compressor Heat Exchangers
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3874	Fuel Gas Compressor Controls and Instrumentation
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3875	Fuel Gas Compressor Filters
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3876	Fuel Gas Compressor Fire System
Fossil-Steam	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3879	Fuel Gas Compressor - other

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-6 Balance of Plant: Auxiliary Systems - Miscellaneous (Auxiliary Systems)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Miscellaneous (Auxiliary Systems)	3898	Miscellaneous plant auxiliary process and services instrumentation and controls
Fossil-Steam	Balance of Plant	Auxiliary Systems	Miscellaneous (Auxiliary Systems)	3899	Other miscellaneous auxiliary system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-7 Balance of Plant: Auxiliary Systems - Open Cooling Water System

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3800	Open cooling water pumps and motors
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3801	Open cooling water piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3802	Open cooling water valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3803	Open cooling water heat exchangers
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3804	Open cooling water system fouling

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Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3805	Open cooling water system instrumentation
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3806	Open cooling water strainer
Fossil-Steam	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3809	Other open cooling water problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-8 Balance of Plant: Auxiliary Systems - Seal Air Fans

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Seal Air Fans	3880	Seal air fan
Fossil-Steam	Balance of Plant	Auxiliary Systems	Seal Air Fans	3881	Seal air fan drive - motor
Fossil-Steam	Balance of Plant	Auxiliary Systems	Seal Air Fans	3882	Seal air control dampers and drives
Fossil-Steam	Balance of Plant	Auxiliary Systems	Seal Air Fans	3883	Seal air filters
Fossil-Steam	Balance of Plant	Auxiliary Systems	Seal Air Fans	3889	Other seal air fan problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-9 Balance of Plant: Auxiliary Systems - Service Air

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Air	3840	Service air compressors
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Air	3841	Service air piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Air	3842	Service air valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Air	3843	Service air dryers
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Air	3844	Soot blowing air compressor and system
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Air	3849	Other service air problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-10 Balance of Plant: Auxiliary Systems - Service Water (Open System)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3810	Service water pumps and motors
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3811	Service water piping
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3812	Service water valves
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3813	Service water heat exchangers
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3814	Service water system fouling
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3815	Service water strainer
Fossil-Steam	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3819	Other service water problems
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

TABLE B08-11 Balance of Plant: Circulating Water Systems					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Circulating Water Systems		3210	Circulating water pumps
Fossil-Steam	Balance of Plant	Circulating Water Systems		3211	Circulating water pump motors
Fossil-Steam	Balance of Plant	Circulating Water Systems		3220	Circulating water piping
Fossil-Steam	Balance of Plant	Circulating Water Systems		3221	Circulating water piping fouling
Fossil-Steam	Balance of Plant	Circulating Water Systems		3230	Circulating water valves
Fossil-Steam	Balance of Plant	Circulating Water Systems		3231	Waterbox
Fossil-Steam	Balance of Plant	Circulating Water Systems		3232	Condenser tube cleaning system including debris filter
Fossil-Steam	Balance of Plant	Circulating Water Systems		3233	Circulating water priming system

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Fossil-Steam	Balance of Plant	Circulating Water Systems		3235	Cooling tower booster pump
Fossil-Steam	Balance of Plant	Circulating Water Systems		3236	Cooling tower booster motor
Fossil-Steam	Balance of Plant	Circulating Water Systems		3238	Cooling tower fan motors
Fossil-Steam	Balance of Plant	Circulating Water Systems		3239	Cooling tower fan motors - variable speed
Fossil-Steam	Balance of Plant	Circulating Water Systems		3240	Cooling tower fans
Fossil-Steam	Balance of Plant	Circulating Water Systems		3241	Cooling tower efficiency below design
Fossil-Steam	Balance of Plant	Circulating Water Systems		3242	Cooling tower fill damage
Fossil-Steam	Balance of Plant	Circulating Water Systems		3243	Cooling tower icing
Fossil-Steam	Balance of Plant	Circulating Water Systems		3244	Cooling tower fires
Fossil-Steam	Balance of Plant	Circulating Water Systems		3245	Other cooling tower problems
Fossil-Steam	Balance of Plant	Circulating Water Systems		3246	Cooling tower fouling
Fossil-Steam	Balance of Plant	Circulating Water Systems		3247	Cooling tower instrumentation
Fossil-Steam	Balance of Plant	Circulating Water Systems		3248	Cooling Tower Overhaul
Fossil-Steam	Balance of Plant	Circulating Water Systems		3250	Circulating water system instruments and controls
Fossil-Steam	Balance of Plant	Circulating Water Systems		3260	Traveling screens
Fossil-Steam	Balance of Plant	Circulating Water Systems		3261	Traveling screen fouling
Fossil-Steam	Balance of Plant	Circulating Water Systems		3269	Circulating water biological conditions (ie, zebra mussels)
Fossil-Steam	Balance of Plant	Circulating Water Systems		3270	Intake system problems other than traveling screens
Fossil-Steam	Balance of Plant	Circulating Water Systems		3271	Intake grating fouling

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Fossil-Steam	Balance of Plant	Circulating Water Systems		3272	Circulating water screenwash system
Fossil-Steam	Balance of Plant	Circulating Water Systems		3273	Debris in circulating water from outside sources (leaves, mud, etc.)
Fossil-Steam	Balance of Plant	Circulating Water Systems		3274	Ice blockages at intake structures including frazil ice, sheets, blocks of ice, etc.
Fossil-Steam	Balance of Plant	Circulating Water Systems		3280	High circulating water temperature (not due to season, tower efficiency below design, or other listed equipment problem)
Fossil-Steam	Balance of Plant	Circulating Water Systems		3281	Circulating water tempering system
Fossil-Steam	Balance of Plant	Circulating Water Systems		3282	Circulating water cooling ponds
Fossil-Steam	Balance of Plant	Circulating Water Systems		3285	Circulating water chemistry
Fossil-Steam	Balance of Plant	Circulating Water Systems		3299	Other circulating water system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-12 Balance of Plant: Condensate System - Low/Intermediate Pressure Heater and Deaerators

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3339	LP heater head leaks
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3340	LP heater tube leaks
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3341	Other LP heater - general
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3342	IP heater tube leaks
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3343	Other IP heater - general
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3344	Deaerator (including level control)
Fossil-Steam	Balance of Plant	Condensate System	Low/Intermediate Pressure Heater and Deaerators	3345	IP heater head leaks

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-13 Balance of Plant: Condensate System - Miscellaneous (Condensate System)

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3360	Condensate makeup and return (including storage tanks)
Fossil-Steam	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3370	Condensate system controls and instrumentation (not hotwell level, heater level, or deaerator level controls; see codes 3150-3159, 3344, 3502).
Fossil-Steam	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3380	Condensate coolers
Fossil-Steam	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3399	Other miscellaneous condensate system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-14 Balance of Plant: Condensate System - Polishers/Chemical Addition

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensate System	Polishers/Chemical Addition	3350	Condensate polishing and filtering systems
Fossil-Steam	Balance of Plant	Condensate System	Polishers/Chemical Addition	3351	Chemical addition systems
Fossil-Steam	Balance of Plant	Condensate System	Polishers/Chemical Addition	3352	Feedwater chemistry (not specific to condenser, polishers, or chemical addition)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-15 Balance of Plant: Condensate System - Pumps, Piping, and Valves

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3300	Condensate water pre-treatment
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3310	Condensate/hotwell pumps
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3311	Condensate/hotwell pump motor
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3312	Condensate booster pump
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3313	Condensate booster pump motor

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Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3314	Condensate booster pump motor - variable speed
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3315	Condensate booster pump drive (other than 3313 and 3314)
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3320	Condensate piping
Fossil-Steam	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3330	Condensate valves

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-16 Balance of Plant: Condensing System - Condenser Casing or Shell and Internals

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3120	Tube sheets
Fossil-Steam	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3121	Expansion joint
Fossil-Steam	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3122	Gaskets and seals
Fossil-Steam	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3123	Hot well
Fossil-Steam	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3124	Tube sheet fouling
Fossil-Steam	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3129	Other condenser casing or shell and internal problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-17 Balance of Plant: Condensing System - Condenser Controls

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensing System	Condenser Controls	3150	Hot well level controls
Fossil-Steam	Balance of Plant	Condensing System	Condenser Controls	3151	Vacuum pump and air ejector controls
Fossil-Steam	Balance of Plant	Condensing System	Condenser Controls	3152	Air-cooled condenser controls
Fossil-Steam	Balance of Plant	Condensing System	Condenser Controls	3159	Other condensing system controls and instruments

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-18 Balance of Plant: Condensing System - Condenser Tubes and Support Equipment					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3110	Condenser tube leaks
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3111	Condenser tube fouling shell side
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3112	Condenser tube fouling tube side
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3113	Condenser tube and water box cleaning (including circulating water flow reversal)
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3114	Air-cooled condenser tubes
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3115	Air-cooled condenser pumps
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3116	Air-cooled condenser fans
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3117	Air-cooled condenser fan motors
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3118	Other Air-cooled condenser problems
Fossil-Steam	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3119	Other condenser tube casing or shell and internal problems
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

TABLE B08-19 Balance of Plant: Condensing System - Miscellaneous (Condensing System)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3170	Condenser inspection (use code 3110 to report looking for tube leaks)
Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3171	Air-cooled condenser inspections
Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3180	Major condenser overhaul
Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3185	Water side cathodic protection
Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3186	Auxiliary condenser and associated equipment

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Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3190	Air leakage (for losses not attributable to previously noted equipment related codes)
Fossil-Steam	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3199	Other miscellaneous condensing system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-20 Balance of Plant: Condensing System - Vacuum Equipment

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3130	Air ejectors
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3131	Air ejector piping and valves
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3132	Inter and after condensers
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3133	Vacuum pumps
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3134	Vacuum pump piping and valves
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3135	Vacuum pump motor and auxiliaries
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3139	Other air extraction system problems - general
Fossil-Steam	Balance of Plant	Condensing System	Vacuum Equipment	3149	Loss of vacuum not attributable to a particular component such as air ejectors or valves, or high back pressure not attributable to high circulating water temperature, or vacuum losses from a known cause.

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-21 Balance of Plant: Electrical

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Electrical		3600	Switchyard transformers and associated cooling systems - external (OMC)
Fossil-Steam	Balance of Plant	Electrical		3601	Switchyard transformers and associated cooling systems - external (not OMC)
Fossil-Steam	Balance of Plant	Electrical		3610	Switchyard circuit breakers - external (not OMC)

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Fossil-Steam	Balance of Plant	Electrical		3611	Switchyard circuit breakers - external (OMC)
Fossil-Steam	Balance of Plant	Electrical		3612	Switchyard system protection devices - external (OMC)
Fossil-Steam	Balance of Plant	Electrical		3613	Switchyard system protection devices - external (not OMC)
Fossil-Steam	Balance of Plant	Electrical		3618	Other switchyard equipment - external (not OMC)
Fossil-Steam	Balance of Plant	Electrical		3619	Other switchyard equipment - external (OMC)
Fossil-Steam	Balance of Plant	Electrical		3620	Main transformer
Fossil-Steam	Balance of Plant	Electrical		3621	Unit auxiliaries transformer
Fossil-Steam	Balance of Plant	Electrical		3622	Station service startup transformer
Fossil-Steam	Balance of Plant	Electrical		3623	Auxiliary generators
Fossil-Steam	Balance of Plant	Electrical		3624	Auxiliary generator voltage supply system
Fossil-Steam	Balance of Plant	Electrical		3629	Other switchyard or high voltage system problems - external
Fossil-Steam	Balance of Plant	Electrical		3630	400-700 volt transformers
Fossil-Steam	Balance of Plant	Electrical		3631	400-700 volt circuit breakers
Fossil-Steam	Balance of Plant	Electrical		3632	400-700 volt conductors and buses
Fossil-Steam	Balance of Plant	Electrical		3633	400-700 volt insulators
Fossil-Steam	Balance of Plant	Electrical		3634	400-700 volt protection devices
Fossil-Steam	Balance of Plant	Electrical		3639	Other 400-700 volt problems
Fossil-Steam	Balance of Plant	Electrical		3640	AC instrument power transformers
Fossil-Steam	Balance of Plant	Electrical		3641	AC Circuit breakers

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Fossil-Steam	Balance of Plant	Electrical		3642	AC Conductors and buses
Fossil-Steam	Balance of Plant	Electrical		3643	AC Inverters
Fossil-Steam	Balance of Plant	Electrical		3644	AC Protection devices
Fossil-Steam	Balance of Plant	Electrical		3649	Other AC instrument power problems
Fossil-Steam	Balance of Plant	Electrical		3650	DC instrument power battery chargers
Fossil-Steam	Balance of Plant	Electrical		3651	DC circuit breakers
Fossil-Steam	Balance of Plant	Electrical		3652	DC conductors and buses
Fossil-Steam	Balance of Plant	Electrical		3653	DC protection devices
Fossil-Steam	Balance of Plant	Electrical		3659	Other DC power problems
Fossil-Steam	Balance of Plant	Electrical		3660	4000-7000 volt transformers
Fossil-Steam	Balance of Plant	Electrical		3661	4000-7000 volt circuit breakers
Fossil-Steam	Balance of Plant	Electrical		3662	4000-7000 volt conductors and buses
Fossil-Steam	Balance of Plant	Electrical		3663	4000-7000 volt insulators
Fossil-Steam	Balance of Plant	Electrical		3664	4000-7000 volt protection devices
Fossil-Steam	Balance of Plant	Electrical		3669	Other 4000-7000 volt problems
Fossil-Steam	Balance of Plant	Electrical		3670	12-15kV transformers
Fossil-Steam	Balance of Plant	Electrical		3671	12-15kV circuit breakers
Fossil-Steam	Balance of Plant	Electrical		3672	12-15kV conductors and buses
Fossil-Steam	Balance of Plant	Electrical		3673	12-15kV insulators

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Fossil-Steam	Balance of Plant	Electrical		3674	12-15kV protection devices
Fossil-Steam	Balance of Plant	Electrical		3679	Other 12-15kV problems
Fossil-Steam	Balance of Plant	Electrical		3680	Other voltage transformers
Fossil-Steam	Balance of Plant	Electrical		3681	Other voltage circuit breakers
Fossil-Steam	Balance of Plant	Electrical		3682	Other voltage conductors and buses
Fossil-Steam	Balance of Plant	Electrical		3683	Other voltage insulators
Fossil-Steam	Balance of Plant	Electrical		3684	Other voltage protection devices
Fossil-Steam	Balance of Plant	Electrical		3689	Other voltage problems
Fossil-Steam	Balance of Plant	Electrical		3690	Station Service Power Distribution System, General

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-22 Balance of Plant: Extraction Steam					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Extraction Steam		3520	HP Extraction steam piping
Fossil-Steam	Balance of Plant	Extraction Steam		3521	HP Extraction steam valves
Fossil-Steam	Balance of Plant	Extraction Steam		3522	HP Extraction steam instruments and controls
Fossil-Steam	Balance of Plant	Extraction Steam		3529	Other HP extraction steam system problems
Fossil-Steam	Balance of Plant	Extraction Steam		3530	IP Extraction steam piping
Fossil-Steam	Balance of Plant	Extraction Steam		3531	IP Extraction steam valves
Fossil-Steam	Balance of Plant	Extraction Steam		3532	IP Extraction steam instruments and controls
Fossil-Steam	Balance of Plant	Extraction Steam		3539	Other IP extraction steam system problems

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Fossil-Steam	Balance of Plant	Extraction Steam		3540	LP Extraction steam piping
Fossil-Steam	Balance of Plant	Extraction Steam		3541	LP Extraction steam valves
Fossil-Steam	Balance of Plant	Extraction Steam		3542	LP Extraction steam instruments and controls
Fossil-Steam	Balance of Plant	Extraction Steam		3549	Other LP extraction steam system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-23 Balance of Plant: Feedwater System					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Feedwater System		3401	Startup feedwater pump
Fossil-Steam	Balance of Plant	Feedwater System		3402	Startup feedwater pump drives - all types
Fossil-Steam	Balance of Plant	Feedwater System		3407	Feedwater pump suction screens
Fossil-Steam	Balance of Plant	Feedwater System		3408	Feedwater pump drive - local controls
Fossil-Steam	Balance of Plant	Feedwater System		3409	Feedwater pump drive motor - variable speed
Fossil-Steam	Balance of Plant	Feedwater System		3410	Feedwater pump
Fossil-Steam	Balance of Plant	Feedwater System		3411	Feedwater pump drive - motor
Fossil-Steam	Balance of Plant	Feedwater System		3412	Feedwater pump drive - steam turbine
Fossil-Steam	Balance of Plant	Feedwater System		3413	Feedwater pump coupling and drive shaft
Fossil-Steam	Balance of Plant	Feedwater System		3414	Feedwater pump local controls
Fossil-Steam	Balance of Plant	Feedwater System		3415	Feedwater pump/drive lube oil system
Fossil-Steam	Balance of Plant	Feedwater System		3416	Other feedwater pump problems
Fossil-Steam	Balance of Plant	Feedwater System		3417	Feedwater pump drive - main shaft

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Fossil-Steam	Balance of Plant	Feedwater System		3418	Feedwater pump drive - other
Fossil-Steam	Balance of Plant	Feedwater System		3419	Feedwater pump drive - gear
Fossil-Steam	Balance of Plant	Feedwater System		3420	Feedwater piping and supports
Fossil-Steam	Balance of Plant	Feedwater System		3430	Feedwater regulating (boiler level control) valve
Fossil-Steam	Balance of Plant	Feedwater System		3431	Other feedwater valves
Fossil-Steam	Balance of Plant	Feedwater System		3439	HP heater head leaks
Fossil-Steam	Balance of Plant	Feedwater System		3440	High pressure heater tube leaks
Fossil-Steam	Balance of Plant	Feedwater System		3441	Other high pressure heater problems (see condensate system for LP and IP heater codes)
Fossil-Steam	Balance of Plant	Feedwater System		3451	Feedwater booster pump suction screens
Fossil-Steam	Balance of Plant	Feedwater System		3452	Feedwater booster pump drive - local controls
Fossil-Steam	Balance of Plant	Feedwater System		3453	Feedwater booster pump drive motor - variable speed
Fossil-Steam	Balance of Plant	Feedwater System		3454	Feedwater booster pump
Fossil-Steam	Balance of Plant	Feedwater System		3455	Feedwater booster pump drive - motor
Fossil-Steam	Balance of Plant	Feedwater System		3456	Feedwater booster pump drive - steam turbine
Fossil-Steam	Balance of Plant	Feedwater System		3457	Feedwater booster pump coupling and drive shaft
Fossil-Steam	Balance of Plant	Feedwater System		3458	Feedwater booster pump local controls
Fossil-Steam	Balance of Plant	Feedwater System		3459	Feedwater booster pump/drive lube oil system
Fossil-Steam	Balance of Plant	Feedwater System		3460	Other feedwater booster pump problems
Fossil-Steam	Balance of Plant	Feedwater System		3461	Feedwater booster pump drive - main shaft

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Fossil-Steam	Balance of Plant	Feedwater System		3462	Feedwater booster pump drive - other
Fossil-Steam	Balance of Plant	Feedwater System		3463	Feedwater booster pump drive - gear
Fossil-Steam	Balance of Plant	Feedwater System		3499	Other feedwater system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-24 Balance of Plant: Heater Drain Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Heater Drain Systems		3501	Heater drain pumps
Fossil-Steam	Balance of Plant	Heater Drain Systems		3502	Heater level control
Fossil-Steam	Balance of Plant	Heater Drain Systems		3503	Heater drain piping
Fossil-Steam	Balance of Plant	Heater Drain Systems		3504	Heater drain valves
Fossil-Steam	Balance of Plant	Heater Drain Systems		3505	Heater drain pump drive
Fossil-Steam	Balance of Plant	Heater Drain Systems		3509	Other heater drain system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Excluding extraction or drain systems.

TABLE B08-25 Balance of Plant: Miscellaneous (Balance of Plant)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3950	Process computer
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3960	Thermal derating (thermal efficiency losses in balance of plant when specific cause(s) unknown)
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3970	Distributive Control System (DCS) - process computer
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3971	DCS - data highway
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3972	DCS - hardware problems (including card failure)

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Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3973	DCS - internal and termination wiring
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3974	DCS - logic problems
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3975	DCS - upgrades
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3979	Other DCS problems
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3980	Programmable Logic Controller (PLC)
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3981	PLC - data highway
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3982	PLC - hardware problems (including card failure)
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3983	PLC - internal and termination wiring
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3984	PLC - logic problems
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3985	PLC - upgrades
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3989	Other PLC problems
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3995	Powerhouse heating and ventilating systems
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3996	Air conditioning systems - rooms and areas
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3998	Balance of plant overhaul/outage
Fossil-Steam	Balance of Plant	Miscellaneous (Balance of Plant)		3999	Other miscellaneous balance of plant problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-26 Balance of Plant: Power Station Switchyard					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Power Station Switchyard		3700	Power Station switchyard (non generating unit equipment)
Fossil-Steam	Balance of Plant	Power Station Switchyard		3710	Transmission line (connected to powerhouse switchyard to 1st Substation)

Fossil-Steam	Balance of Plant	Power Station Switchyard		3720	Transmission equipment at the 1st substation (see code 9300 if applicable)
Fossil-Steam	Balance of Plant	Power Station Switchyard		3730	Transmission equipment beyond the 1st substation (see code 9300 if applicable)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-27 Balance of Plant: Waste Water (zero discharge) Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Balance of Plant	Waste Water (zero discharge) Systems		3290	Waste water (zero discharge) tanks, pumps, and motors
Fossil-Steam	Balance of Plant	Waste Water (zero discharge) Systems		3291	Waste water (zero discharge) system fouling
Fossil-Steam	Balance of Plant	Waste Water (zero discharge) Systems		3292	Waste water (zero discharge) piping
Fossil-Steam	Balance of Plant	Waste Water (zero discharge) Systems		3293	Waste water (zero discharge) valves
Fossil-Steam	Balance of Plant	Waste Water (zero discharge) Systems		3294	Waste water (zero discharge) controls and instrumentation
Fossil-Steam	Balance of Plant	Waste Water (zero discharge) Systems		3295	Other waste water (zero discharge) problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

BOILER

This set of codes contains the following:

- Boiler
- Boiler internals (tubes, refractory, supports, etc.)
- All the fuel handling, storage, preparation, and burning equipment.
- The forced/induced draft air system.
- Slag and ash removal except for particulate and gas cleanup. These latter items are covered under pollution control equipment.
- The main steam and reheat steam systems up to but not including the turbine stop or isolation valves.
- The feedwater system downstream of the final valve prior to entry into the economizer or boiler.
- Boiler blowdown systems.
- The startup bypass system including drains up to the heaters or condenser.

- Boiler water chemistry problems not due to problems in the condensate/feedwater system, the chemical addition system, or the demineralizer/polisher system.
- The instruments and controls associated with the above equipment.

TABLE B08-28 Boiler: Boiler Air and Gas Systems - Air Supply					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1400	Forced draft fans
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1401	Forced draft fan dampers
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1407	Forced draft fan lubrication system
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1410	Forced draft fan motors
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1411	Forced draft fan motors - variable speed
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1412	Forced draft fan drives (other than motor)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1413	Forced draft fan couplings
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1415	Forced draft fan controls
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1420	Other forced draft fan problems
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1421	Secondary air fans/blowers
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1422	Secondary air fan/blower motors - single speed
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1423	Secondary air fan/blower motors - variable speed
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1424	Secondary air fan/blower controls
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1430	Air supply ducts from FD fan
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1431	Air supply dampers from FD fan
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1432	Air supply duct expansion joints
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1440	Air supply dampers
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Air Supply	1450	Other air supply problems
Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Excluding burner pipes, wind boxes, primary air, or pulverizer exhausters.					

TABLE B08-29 Boiler: Boiler Air and Gas Systems - Flue Gas					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1455	Induced draft fans
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1456	Induced draft fan dampers
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1457	Induced draft fan lubrication systems
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1460	Induced draft fan fouling
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1470	Induced draft fan motors and drives

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Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1471	Induced draft fan motors - variable speed
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1472	Inducted draft fan coupling
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1475	Induced draft fan controls
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1476	Induced draft fan speed changer
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1480	Other induced draft fan problems
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1487	Air heater (tubular)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1488	Air heater (regenerative)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1489	Air heater (heat pipe, plate-type)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1492	Air heater fouling (tubular)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1493	Air heater fouling (regenerative)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1495	Other air heater fouling (heat pipe, plate-type)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1500	Air heater soot blowers
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1510	Flue gas ducts (except recirculation)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1512	Flue gas expansion joints
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1520	Flue gas dampers (except recirculation)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas	1530	Other flue gas problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Excluding burner pipes, wind boxes, primary air, or pulverizer exhausters.

TABLE B08-30 Boiler: Boiler Air and Gas Systems - Flue Gas Recirculation

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1535	Flue gas recirculating fan
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1536	Flue gas recirculating fan dampers
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1537	Flue gas recirculating fan lubrication systems
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1540	Flue gas recirculation fan fouling
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1550	Flue gas recirculation fan motors
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1555	Flue gas recirculation fan controls
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1560	Other flue gas recirculation fan problems
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1570	Flue gas recirculation ducts
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1572	Flue gas recirculation duct expansion joints
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Flue Gas Recirculation	1580	Flue gas recirculation dampers

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Excluding burner pipes, wind boxes, primary air, or pulverizer exhausters.

TABLE B08-31 Boiler: Boiler Air and Gas Systems - Miscellaneous (Boiler Air and Gas Systems)

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1590	Stacks (use code 8430 for stack problems due to pollution control equipment)
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1591	Stack damper and linkage
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1592	Stack damper linkage motors
Fossil-Steam	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1599	Other miscellaneous boiler air and gas system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Excluding burner pipes, wind boxes, primary air, or pulverizer exhausters.

TABLE B08-32 Boiler: Boiler Control Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Control Systems		1700	Feedwater controls (report local controls - feedwater pump, feedwater regulator valve, etc., - with component or system)
Fossil-Steam	Boiler	Boiler Control Systems		1710	Combustion/steam condition controls (report local controls - burners, pulverizers, etc., - with component or system)
Fossil-Steam	Boiler	Boiler Control Systems		1720	Desuperheater/atemperator controls
Fossil-Steam	Boiler	Boiler Control Systems		1730	Boiler explosion or implosion
Fossil-Steam	Boiler	Boiler Control Systems		1740	Boiler drum gage glasses / level indicator
Fossil-Steam	Boiler	Boiler Control Systems		1741	Furnace and water gauge television auxiliary system
Fossil-Steam	Boiler	Boiler Control Systems		1750	Burner management system
Fossil-Steam	Boiler	Boiler Control Systems		1760	Feedwater instrumentation (not local controls)
Fossil-Steam	Boiler	Boiler Control Systems		1761	Combustion/Steam condition instrumentation (not local controls)
Fossil-Steam	Boiler	Boiler Control Systems		1762	Desuperheater/atemperator instrumentation (not local controls)
Fossil-Steam	Boiler	Boiler Control Systems		1799	Other boiler instrumentation and control problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-33 Boiler: Boiler Design Limitations

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Design Limitations		1900	Improper balance between tube sections not due to fouling or plugging
Fossil-Steam	Boiler	Boiler Design Limitations		1910	Inadequate air not due to equipment problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Including instruments which input to the controls.

TABLE B08-34 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Burners					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	358	Oil burner piping and valves
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	359	Gas burner piping and valves
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	360	Burners
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	361	Burner orifices
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	362	Burner tilts
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	370	Burner instruments and controls (except light off)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	380	Light off (igniter) systems (including fuel supply)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	385	Igniters
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	390	Burner wind boxes and dampers
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	400	Burner wind box fires
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	410	Other burner problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-35 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Cyclone					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION

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Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	415	Cyclone feeders
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	420	Cyclone crusher
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	425	Cyclone dampers
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	426	Cyclone air ducts
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	430	Cyclone furnace
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	435	Other cyclone problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-36 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Oil and Gas Systems (except light off)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	440	Fuel oil pumps (general)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	441	Fuel oil pumps (burner supply)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	442	Fuel oil pumps (forwarding/transfer)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	443	Fuel oil (burner supply) pump drives
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	444	Fuel oil (forwarding/transfer) pump drives
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	450	Fuel oil heaters
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	460	Fuel oil atomizers
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	470	Oil and gas fires
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	480	Other oil and gas fuel supply problems (see codes 0360-0410 for burner problems)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-37 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Pulverizers, Primary Air Fans, and Associated Ducts

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	200	Pulverizer exhauster fan (for indirect firing)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	205	Pulverizer exhauster fan drive
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	210	Pulverizer heater (for indirect firing)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	220	Pulverizer system cyclone separator
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	230	Pulverizer bag filter
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	240	Pulverized coal bin
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	250	Pulverizer feeders
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	253	Pulverizer feeder motor
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	255	Pulverizer feeder coal scales
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	256	Seal air system (air to pulverizers)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	257	Coal Crusher/dryer between feeder and pulverizer
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	260	Primary air fan
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	262	Primary air fan lube oil system
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	263	Primary air fan drives
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	264	Other primary air fan problems
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	265	Primary air heater
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	266	Primary air heater fouling
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	267	Primary air flow instrumentation

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Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	270	Primary air duct and dampers
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	280	Pulverizer fires
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	290	Pulverizer reduced capacity due to wear
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	300	Pulverizer motors and drives
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	310	Pulverizer mills
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	312	Pulverizer mill classifiers
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	313	Pulverizer mill trunnion seals
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	314	Pulverizer mill ball charger hopper (ball mills only)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	315	Pulverizer mill coal level controls
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	320	Foreign object in Pulverizers mill
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	325	Pulverizer skidding
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	330	Pulverizer coal leak (pulverizers only)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	331	Pulverizer system coal leaks (other than pulverizers, see code 0330)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	335	Pulverizer lube oil system
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	338	Pulverizer control systems (temperature and pressure)
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	339	Pulverizer System Puff
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	340	Other pulverizer problems
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	341	Pulverizer deluge system
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	342	Pulverizer inert system

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Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	344	Pulverizer inspection
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	345	Pulverizer overhaul
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	346	Pulverizer pyrite removal system
Fossil-Steam	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	350	Pulverized fuel and air piping (from pulverizer to wind box) (see code 0898 for pulverizer reject system problems)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-38 Boiler: Boiler Fuel Supply to Bunker - Coal Handling Equipment up Through Bunkers					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	10	Thaw shed failure or fire
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	20	Coal car dumpers, shakers, and unloaders
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	22	Unloading/receiving hopper (train/truck)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	24	Rotary plow
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	26	Dust suppression system
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	28	Dust collection system
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	30	Coal conveyors and feeders
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	35	Metal detector/collector (including magnetic separator)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	40	Coal elevators
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	50	Coal storage fires
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	60	Coal crushers including motors
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	70	Coal samplers

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Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	75	Storage silos/hoppers
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	80	Stackers/reclaimers
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	84	Coal conveyor scales storage coal pile
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	85	Bunker feeder coal scales
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	90	Bunker fires
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	95	Bunker flow problems
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	100	Bunker gates
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	105	Bunker structures
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	106	Coal drying system (see additional codes 0125-0127)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	107	Screen (prior to bunkers)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	110	Other coal fuel supply problems up through bunkers
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	125	Coal crusher dryer hammers (see code 0106)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	126	Coal crusher lube oil system (see code 0106)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	127	Other coal crusher dryer problems (see code 0106)
Fossil-Steam	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	129	Other coal processing system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-39 Boiler: Boiler Internals and Structures					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Internals and Structures		800	Drums and drum internals (single drum only)
Fossil-Steam	Boiler	Boiler Internals and Structures		810	Boiler supports and structures (use code 1320 for tube supports)

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Fossil-Steam	Boiler	Boiler Internals and Structures		820	Casing
Fossil-Steam	Boiler	Boiler Internals and Structures		830	Doors
Fossil-Steam	Boiler	Boiler Internals and Structures		840	Refractory and insulation
Fossil-Steam	Boiler	Boiler Internals and Structures		845	Windbox expansion joints
Fossil-Steam	Boiler	Boiler Internals and Structures		847	Other expansion joints
Fossil-Steam	Boiler	Boiler Internals and Structures		850	Other internal or structural problems
Fossil-Steam	Boiler	Boiler Internals and Structures		855	Drum relief/safety valves (single drum only)
Fossil-Steam	Boiler	Boiler Internals and Structures		859	Tube external fins/membranes

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-40 Boiler: Boiler Overhaul and Inspections

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Overhaul and Inspections		1800	Major boiler overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)
Fossil-Steam	Boiler	Boiler Overhaul and Inspections		1801	Minor boiler overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Fossil-Steam	Boiler	Boiler Overhaul and Inspections		1810	Other boiler inspections
Fossil-Steam	Boiler	Boiler Overhaul and Inspections		1811	Boiler Inspections - problem identification / investigation
Fossil-Steam	Boiler	Boiler Overhaul and Inspections		1812	Boiler Inspections - scheduled or routine
Fossil-Steam	Boiler	Boiler Overhaul and Inspections		1820	Chemical cleaning/steam blows

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-41 Boiler: Boiler Piping System - Boiler Recirculation

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Piping System	Boiler Recirculation	740	Boiler recirculation pumps
Fossil-Steam	Boiler	Boiler Piping System	Boiler Recirculation	741	Boiler recirculation pumps - motors
Fossil-Steam	Boiler	Boiler Piping System	Boiler Recirculation	742	Boiler recirculation pumps - motors - cooling system
Fossil-Steam	Boiler	Boiler Piping System	Boiler Recirculation	750	Boiler recirculation piping including downcomers
Fossil-Steam	Boiler	Boiler Piping System	Boiler Recirculation	760	Boiler recirculation valves
Fossil-Steam	Boiler	Boiler Piping System	Boiler Recirculation	770	Other boiler recirculation problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-42 Boiler: Boiler Piping System - Cold and Hot Reheat Steam

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Piping System	Cold and Hot Reheat Steam	540	Hot reheat steam piping up to turbine stop valves
Fossil-Steam	Boiler	Boiler Piping System	Cold and Hot Reheat Steam	541	Cold reheat steam piping up to boiler
Fossil-Steam	Boiler	Boiler Piping System	Cold and Hot Reheat Steam	550	Reheat steam relief/safety valves
Fossil-Steam	Boiler	Boiler Piping System	Cold and Hot Reheat Steam	560	Other hot reheat steam valves (not including turbine stop or intercept valves)
Fossil-Steam	Boiler	Boiler Piping System	Cold and Hot Reheat Steam	561	Other cold reheat steam valves (not including turbine stop or intercept valves)
Fossil-Steam	Boiler	Boiler Piping System	Cold and Hot Reheat Steam	570	Other reheat steam problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-43 Boiler: Boiler Piping System - Desuperheaters/Attemperators

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Piping System	Desuperheaters/Attemperators	580	Desuperheater/attemperator piping
Fossil-Steam	Boiler	Boiler Piping System	Desuperheaters/Attemperators	590	Desuperheater/attemperator valves
Fossil-Steam	Boiler	Boiler Piping System	Desuperheaters/Attemperators	600	Desuperheater/attemperator spray nozzles
Fossil-Steam	Boiler	Boiler Piping System	Desuperheaters/Attemperators	610	Desuperheater/attemperator drums
Fossil-Steam	Boiler	Boiler Piping System	Desuperheaters/Attemperators	620	Other desuperheater/attemperator problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-44 Boiler: Boiler Piping System - Feedwater and Blowdown

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	670	Feedwater piping downstream of feedwater regulating valve
Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	680	Feedwater valves (not feedwater regulating valve)

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Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	690	Other feedwater problems downstream of feedwater regulating valve (use codes 3401 to 3499 for remainder of feedwater system)
Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	700	Blowdown system valves
Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	710	Blowdown system piping
Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	720	Blowdown system controls / instrumentation
Fossil-Steam	Boiler	Boiler Piping System	Feedwater and Blowdown	730	Other blowdown system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-45 Boiler: Boiler Piping System - Main Steam					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Piping System	Main Steam	500	Main steam piping up to turbine stop valves
Fossil-Steam	Boiler	Boiler Piping System	Main Steam	510	Main steam relief/safety valves off superheater
Fossil-Steam	Boiler	Boiler Piping System	Main Steam	520	Other main steam valves (including vent and drain valves but not including the turbine stop valves)
Fossil-Steam	Boiler	Boiler Piping System	Main Steam	530	Other main steam system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-46 Boiler: Boiler Piping System - Miscellaneous (Piping)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Piping System	Miscellaneous (Piping)	775	Economizer piping
Fossil-Steam	Boiler	Boiler Piping System	Miscellaneous (Piping)	780	Headers between tube bundles
Fossil-Steam	Boiler	Boiler Piping System	Miscellaneous (Piping)	782	Headers and caps
Fossil-Steam	Boiler	Boiler Piping System	Miscellaneous (Piping)	790	Pipe hangers, brackets, supports (general)
Fossil-Steam	Boiler	Boiler Piping System	Miscellaneous (Piping)	799	Other miscellaneous piping system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-47 Boiler: Boiler Piping System - Startup Bypass					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION

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Fossil-Steam	Boiler	Boiler Piping System	Startup Bypass	630	Startup bypass system piping (including drain lines up to heaters or condenser)
Fossil-Steam	Boiler	Boiler Piping System	Startup Bypass	640	Startup bypass system valves
Fossil-Steam	Boiler	Boiler Piping System	Startup Bypass	650	Startup bypass tanks or flash tanks
Fossil-Steam	Boiler	Boiler Piping System	Startup Bypass	655	Steam by-pass system instrumentation and controls
Fossil-Steam	Boiler	Boiler Piping System	Startup Bypass	660	Other startup bypass system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-48 Boiler: Boiler Tube Fireside Slagging or Fouling					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1100	Waterwall (Furnace wall)
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1103	Steam generating tubes between steam drum and mud drum
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1105	Generating tubes
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1110	Cyclone Furnace (in cyclone area only)
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1120	Convection Pass Wall
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1130	Boiler screen, wing wall, or slag screen (water tubes only)
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1140	First superheater
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1150	Second superheater
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1160	First reheater
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1170	Second reheater
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1180	Economizer
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1190	Other tube slagging or fouling
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1200	Operation at reduced power to avoid slagging or fouling (use codes 1100 to

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					1190 to report power reductions for slag accumulation or slag removal)
Fossil-Steam	Boiler	Boiler Tube Fireside Slagging or Fouling		1210	Operation at reduced power to avoid slagging or fouling on waterwalls (Furnace walls) (use codes 1100-1190 to report power reductions for slag accumulation or slag removal)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-49 Boiler: Boiler Tube Leaks

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Tube Leaks		1000	Waterwall (Furnace wall)
Fossil-Steam	Boiler	Boiler Tube Leaks		1003	Steam generating tubes between steam drum and mud drum
Fossil-Steam	Boiler	Boiler Tube Leaks		1005	Generating tubes
Fossil-Steam	Boiler	Boiler Tube Leaks		1010	Cyclone furnace (in cyclone area only)
Fossil-Steam	Boiler	Boiler Tube Leaks		1020	Convection pass wall (water tubes only)
Fossil-Steam	Boiler	Boiler Tube Leaks		1030	Boiler screen, wing wall, or slag screen (water tubes only)
Fossil-Steam	Boiler	Boiler Tube Leaks		1035	Platen superheater
Fossil-Steam	Boiler	Boiler Tube Leaks		1040	First superheater
Fossil-Steam	Boiler	Boiler Tube Leaks		1050	Second superheater
Fossil-Steam	Boiler	Boiler Tube Leaks		1055	External superheater link tubing
Fossil-Steam	Boiler	Boiler Tube Leaks		1060	First reheater
Fossil-Steam	Boiler	Boiler Tube Leaks		1070	Second reheater
Fossil-Steam	Boiler	Boiler Tube Leaks		1075	External reheater link tubing
Fossil-Steam	Boiler	Boiler Tube Leaks		1080	Economizer
Fossil-Steam	Boiler	Boiler Tube Leaks		1090	Other boiler tube leaks

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use codes 860 and 870 for fouling or slagging due to unavailability of soot blowers or their air or steam supply.

TABLE B08-50 Boiler: Boiler Water Condition

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Boiler Water Condition		1850	Boiler water condition (not feedwater water quality)

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use code 859 for tube/membrane failures.

TABLE B08-51 Boiler: Miscellaneous (Boiler)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Miscellaneous (Boiler)		1980	Boiler safety valve test
Fossil-Steam	Boiler	Miscellaneous (Boiler)		1990	Boiler performance testing (use code 9999 for total unit performance testing)
Fossil-Steam	Boiler	Miscellaneous (Boiler)		1999	Boiler, miscellaneous
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

TABLE B08-52 Boiler: Miscellaneous Boiler Tube Problems					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1300	Water side fouling
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1305	Fireside cleaning (which requires a full outage) Use code 1200 for cleanings that cause deratings.
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1310	Water side cleaning (acid cleaning)
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1320	Tube supports/attachments
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1330	Slag fall damage
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1340	Tube modifications (including addition and removal of tubes)
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1350	Other miscellaneous boiler tube problems
Fossil-Steam	Boiler	Miscellaneous Boiler Tube Problems		1360	Boiler drains system
Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use more specific codes - other slagging and fouling problems, other control problems, etc. - whenever possible. Describe miscellaneous problems in the verbal description.					

TABLE B08-53 Boiler: Slag and Ash Removal					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Boiler	Slag and Ash Removal		860	Soot blowers - air (see code 3844 for air delivery system)
Fossil-Steam	Boiler	Slag and Ash Removal		870	Soot blowers - steam
Fossil-Steam	Boiler	Slag and Ash Removal		871	Soot blowers - sonic
Fossil-Steam	Boiler	Slag and Ash Removal		872	Soot blowers - water
Fossil-Steam	Boiler	Slag and Ash Removal		873	Soot blower drives
Fossil-Steam	Boiler	Slag and Ash Removal		876	Soot blower controls

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Fossil-Steam	Boiler	Slag and Ash Removal		880	Fly Ash Removal System (not precipitators, scrubbers, mechanical collectors, or baghouses)
Fossil-Steam	Boiler	Slag and Ash Removal		885	Fly ash Removal System - wet transport
Fossil-Steam	Boiler	Slag and Ash Removal		890	Bottom ash systems (wet or dry)
Fossil-Steam	Boiler	Slag and Ash Removal		891	Bottom ash hoppers (including gates)
Fossil-Steam	Boiler	Slag and Ash Removal		892	Bottom ash clinker grinders
Fossil-Steam	Boiler	Slag and Ash Removal		893	Bottom ash water pumps and motors
Fossil-Steam	Boiler	Slag and Ash Removal		894	Bottom ash piping and valves
Fossil-Steam	Boiler	Slag and Ash Removal		895	Ashpit trouble
Fossil-Steam	Boiler	Slag and Ash Removal		896	Bottom ash dewatering bin system, instruments and controls
Fossil-Steam	Boiler	Slag and Ash Removal		897	Bottom ash rotary (drag chain type) conveyor and motor
Fossil-Steam	Boiler	Slag and Ash Removal		898	Bottom ash pyrite hopper (pulverizer reject) system
Fossil-Steam	Boiler	Slag and Ash Removal		899	Bottom ash controls and instrumentation
Fossil-Steam	Boiler	Slag and Ash Removal		900	Slag tap (cyclone furnace)
Fossil-Steam	Boiler	Slag and Ash Removal		910	Slag tap (other than cyclone furnace)
Fossil-Steam	Boiler	Slag and Ash Removal		920	Other slag and ash removal problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

EXTERNAL

Use this set of codes to report events caused by external factors (flood, lightning, etc.); economic factors (lack of fuel, labor strikes, etc.); operator training; and transmission system problems external to the plant.

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	External	Catastrophe		9000	Flood
Fossil-Steam	External	Catastrophe		9001	Drought
Fossil-Steam	External	Catastrophe		9010	Fire including wildfires, not related to a specific component
Fossil-Steam	External	Catastrophe		9020	Lightning
Fossil-Steam	External	Catastrophe		9025	Geomagnetic disturbance
Fossil-Steam	External	Catastrophe		9030	Earthquake
Fossil-Steam	External	Catastrophe		9031	Tornado
Fossil-Steam	External	Catastrophe		9035	Hurricane

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Fossil-Steam	External	Catastrophe		9036	Storms (ice, snow, etc)
Fossil-Steam	External	Catastrophe		9040	Other catastrophe
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

TABLE B08-55 External: Economic					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	External	Economic		0	Reserve shutdown
Fossil-Steam	External	Economic		9130	Failure of fuel supplier to fulfill contractual obligations or a pre-arranged deal due to physical fuel disruptions or operational impairments (e.g. force majeure on a pipeline or compressor down; making the pipeline incapable of making its firm deliveries.)
Fossil-Steam	External	Economic		9131	Lack of fuel – due to contractual or tariff provisions that allow for service interruption or price fluctuations during peak demand periods.
Fossil-Steam	External	Economic		9132	Wet Fuel - Biomass
Fossil-Steam	External	Economic		9134	Fuel conservation
Fossil-Steam	External	Economic		9136	Problems with Primary Fuel for Units with Secondary Fuel Operation
Fossil-Steam	External	Economic		9137	Ground water or other water supply problems
Fossil-Steam	External	Economic		9140	Plant modifications to burn different fuel that are not regulatory mandated
Fossil-Steam	External	Economic		9150	Labor strikes company-wide problems or strikes outside the company's jurisdiction such as manufacturers (delaying repairs) or transportation (fuel supply) problems.
Fossil-Steam	External	Economic		9151	Labor strikes direct plant management grievances that result in a walkout or strike are under plant management control.
Fossil-Steam	External	Economic		9160	Other economic problems
Fossil-Steam	External	Economic		9180	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9181	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9182	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9183	Economic (for internal use at plants only)

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Fossil-Steam	External	Economic		9184	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9185	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9186	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9187	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9188	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9189	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9190	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9191	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9192	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9193	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9194	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9195	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9196	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9197	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9198	Economic (for internal use at plants only)
Fossil-Steam	External	Economic		9199	Economic (for internal use at plants only)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-56 External: Fuel Quality					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	External	Fuel Quality		9200	High ash content (OMC)
Fossil-Steam	External	Fuel Quality		9201	High ash content (not OMC)
Fossil-Steam	External	Fuel Quality		9205	Poor quality natural gas fuel, low heat content
Fossil-Steam	External	Fuel Quality		9210	Low grindability (OMC)
Fossil-Steam	External	Fuel Quality		9211	Low grindability (not OMC)
Fossil-Steam	External	Fuel Quality		9220	High sulfur content (OMC)
Fossil-Steam	External	Fuel Quality		9221	High sulfur content (not OMC)
Fossil-Steam	External	Fuel Quality		9230	High vanadium content (OMC)
Fossil-Steam	External	Fuel Quality		9231	High vanadium content (not OMC)
Fossil-Steam	External	Fuel Quality		9240	High sodium content (OMC)
Fossil-Steam	External	Fuel Quality		9241	High sodium content (not OMC)
Fossil-Steam	External	Fuel Quality		9250	Low BTU coal (OMC)
Fossil-Steam	External	Fuel Quality		9251	Low BTU coal (not OMC)
Fossil-Steam	External	Fuel Quality		9260	Low BTU oil (OMC)
Fossil-Steam	External	Fuel Quality		9261	Low BTU oil (not OMC)
Fossil-Steam	External	Fuel Quality		9270	Wet coal (OMC)

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Fossil-Steam	External	Fuel Quality		9271	Wet coal (not OMC)
Fossil-Steam	External	Fuel Quality		9280	Frozen coal (OMC)
Fossil-Steam	External	Fuel Quality		9281	Frozen coal (not OMC)
Fossil-Steam	External	Fuel Quality		9290	Other fuel quality problems (OMC)
Fossil-Steam	External	Fuel Quality		9291	Other fuel quality problems (not OMC)

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use code 9600 to 9650 if the fuel quality results in excess stack emissions through no fault in the pollution control equipment. Use the appropriate equipment code to report fouling and slagging.

TABLE B08-57 External: Miscellaneous (External)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	External	Miscellaneous (External)		9300	Transmission system problems other than catastrophes (do not include switchyard problems in this category; see codes 3600 to 3629, 3720 to 3730)
Fossil-Steam	External	Miscellaneous (External)		9305	Ash disposal problem
Fossil-Steam	External	Miscellaneous (External)		9310	Operator training
Fossil-Steam	External	Miscellaneous (External)		9320	Other miscellaneous external problems
Fossil-Steam	External	Miscellaneous (External)		9340	Synchronous Condenser Operation

Notes: 1) For use with Unit Codes 100-199 and 600-649.

GENERATOR

This set of codes contains the generator, exciter, generator cooling systems, and generator controls. Note the main leads up to and includes the generator output breaker in this set of codes.

TABLE B08-58 Generator: Controls

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Generator	Controls		4700	Generator voltage control
Fossil-Steam	Generator	Controls		4710	Generator metering devices
Fossil-Steam	Generator	Controls		4720	Generator synchronization equipment
Fossil-Steam	Generator	Controls		4730	Generator current and potential transformers
Fossil-Steam	Generator	Controls		4740	Emergency generator trip devices
Fossil-Steam	Generator	Controls		4750	Other generator controls and metering problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-59 Generator: Cooling System

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
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Fossil-Steam	Generator	Cooling System		4610	Hydrogen cooling system piping and valves
Fossil-Steam	Generator	Cooling System		4611	Hydrogen coolers
Fossil-Steam	Generator	Cooling System		4612	Hydrogen storage system
Fossil-Steam	Generator	Cooling System		4613	Hydrogen seals
Fossil-Steam	Generator	Cooling System		4619	Other hydrogen system problems
Fossil-Steam	Generator	Cooling System		4620	Air cooling system
Fossil-Steam	Generator	Cooling System		4630	Liquid cooling system
Fossil-Steam	Generator	Cooling System		4640	Seal oil system and seals
Fossil-Steam	Generator	Cooling System		4650	Other cooling system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Report failures caused by water leaks into generator as codes 4500, 4510, etc.

TABLE B08-60 Generator: Exciter

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Generator	Exciter		4600	Exciter drive - motor
Fossil-Steam	Generator	Exciter		4601	Exciter field rheostat
Fossil-Steam	Generator	Exciter		4602	Exciter commutator and brushes
Fossil-Steam	Generator	Exciter		4603	Solid state exciter element
Fossil-Steam	Generator	Exciter		4604	Exciter drive - shaft
Fossil-Steam	Generator	Exciter		4605	Exciter transformer
Fossil-Steam	Generator	Exciter		4609	Other exciter problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-61 Generator: Generator

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Generator	Generator		4500	Rotor windings (including damper windings and fan blades on hydro units)
Fossil-Steam	Generator	Generator		4510	Rotor collector rings
Fossil-Steam	Generator	Generator		4511	Rotor, General
Fossil-Steam	Generator	Generator		4512	Retaining Rings
Fossil-Steam	Generator	Generator		4520	Stator windings, bushings, and terminals
Fossil-Steam	Generator	Generator		4530	Stator core iron
Fossil-Steam	Generator	Generator		4535	Stator, General
Fossil-Steam	Generator	Generator		4536	Generator Heaters
Fossil-Steam	Generator	Generator		4540	Brushes and brush rigging
Fossil-Steam	Generator	Generator		4550	Generator bearings and lube oil system (including thrust bearings on hydro units)
Fossil-Steam	Generator	Generator		4551	Generator bearings
Fossil-Steam	Generator	Generator		4552	Generator lube oil system
Fossil-Steam	Generator	Generator		4555	Bearing cooling system
Fossil-Steam	Generator	Generator		4560	Generator vibration (excluding vibration due to failed bearing and other components)

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Fossil-Steam	Generator	Generator		4570	Generator casing
Fossil-Steam	Generator	Generator		4580	Generator end bells and bolting

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-62 Generator: Miscellaneous (Generator)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Generator	Miscellaneous (Generator)		4800	Generator main leads
Fossil-Steam	Generator	Miscellaneous (Generator)		4805	Generator Bus Duct Cooling System
Fossil-Steam	Generator	Miscellaneous (Generator)		4810	Generator output breaker
Fossil-Steam	Generator	Miscellaneous (Generator)		4830	Major generator overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)
Fossil-Steam	Generator	Miscellaneous (Generator)		4831	Minor generator overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Fossil-Steam	Generator	Miscellaneous (Generator)		4840	Inspection
Fossil-Steam	Generator	Miscellaneous (Generator)		4841	Generator dole testing
Fossil-Steam	Generator	Miscellaneous (Generator)		4842	Reactive and capability testing
Fossil-Steam	Generator	Miscellaneous (Generator)		4850	Core monitor alarm
Fossil-Steam	Generator	Miscellaneous (Generator)		4860	Generator neutral grounding equipment
Fossil-Steam	Generator	Miscellaneous (Generator)		4899	Other miscellaneous generator problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

INACTIVE STATES

TABLE B08-63 Inactive States: Inactive States					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Inactive States	Inactive States		2	Inactive Reserve Shutdown
Fossil-Steam	Inactive States	Inactive States		9990	Retired unit
Fossil-Steam	Inactive States	Inactive States		9991	Mothballed unit

Notes: 1) For use with Unit Codes 100-199 and 600-649.

PERFORMANCE

TABLE B08-64 Performance: Performance					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Performance	Performance		9997	NERC Reliability Standard Requirement
Fossil-Steam	Performance	Performance		9998	Black start testing

Fossil-Steam	Performance	Performance		9999	Total unit performance testing (use appropriate codes for individual component testing)
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

PERSONNEL OR PROCEDURAL ERRORS

TABLE B08-65 Personnel or Procedural Errors: Personnel or Procedural Errors					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9900	Operator error
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9910	Maintenance personnel error
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9920	Contractor error
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9930	Operating procedure error
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9940	Maintenance procedure error
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9950	Contractor procedure error
Fossil-Steam	Personnel or Procedural Errors	Personnel or Procedural Errors		9960	Staff shortage
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

POLLUTION CONTROL EQUIPMENT

Use this set of codes to report problems with flue gas desulphurization equipment and stack gas particulate removal equipment. If outages or deratings occur due to reasons other than equipment problems, use the set of codes for Regulatory, Safety, Environmental stack emission limits.

TABLE B08-66 Pollution Control Equipment: CO Reduction					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	CO Reduction		8840	CO Active catalyst
Fossil-Steam	Pollution Control Equipment	CO Reduction		8841	CO Support materials
Fossil-Steam	Pollution Control Equipment	CO Reduction		8842	CO Plugging

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Fossil-Steam	Pollution Control Equipment	CO Reduction		8845	Other CO reduction problems
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Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-67 Pollution Control Equipment: Continuous Emissions Monitoring Systems (CEMS)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8700	CEMS Certification and Recertification
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8710	SO2 analyzer problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8720	NOx analyzer problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8730	CO analyzer problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8740	CO2 analyzer problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8750	O2 analyzer problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8760	Opacity monitor problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8770	Flow monitor problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8780	Data acquisition system problems
Fossil-Steam	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8790	Miscellaneous CEMS problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-68 Pollution Control Equipment: Dry Scrubbers - Dry Scrubber

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8528	Dry scrubber instruments and controls
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8529	Gas dispersers
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8530	Spray towers

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Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8531	Spray machine/atomizer
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8532	Spray machine/atomizer motors
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8533	Spray machine/atomizer lubrication systems
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8534	Spray machine/atomizer vibration problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-69 Pollution Control Equipment: Dry Scrubbers - Miscellaneous (Dry Scrubber)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8544	Mechanical failures
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8545	Electrical failures
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8546	Major overhaul
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8547	Inspection
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8548	Testing
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8549	Other dry scrubber problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-70 Pollution Control Equipment: Dry Scrubbers - Piping, Ducting, and Dampers

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8522	Piping
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8523	Valves
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8524	Strainers or filters
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8525	Ducting

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Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8526	Dampers
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8527	Other piping, ducting, and damper problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-71 Pollution Control Equipment: Dry Scrubbers - Reagent\Slurry Supply

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8500	Slurry storage and feed tanks
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8501	Reagent storage, feed bins, and conveyors
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8502	Weigh feeders
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8503	Screw conveyors
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8504	Mills/slakers
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8505	Scalping screens
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8506	Slurry pipelines
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8507	Reagent uploading and transfer systems
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8508	Reagent unavailability
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8510	Slurry mixers and agitators
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8520	Slurry transfer pumps and motors
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8521	Reagent/slurry problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-72 Pollution Control Equipment: Dry Scrubbers - Waste Disposal and Recovery

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
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Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8535	Fly ash conveyors
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8536	Bucket elevators
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8537	Weigh hoppers
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8538	Recycle storage and feed tanks including agitators
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8539	Recycle slurry transfer pumps
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8540	Waste disposal
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8541	Recycle feed bins
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8542	Recycle feed bins aeration systems
Fossil-Steam	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8543	Powder coolers

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-73 Pollution Control Equipment: Miscellaneous (Pollution Control Equipment)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8565	Electrostatic Precipitator rebuild/overhaul
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8600	Flue gas additives (furnace injection)
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8601	SO3 mitigation
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8620	Mercury Abatement Equipment
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8650	Baghouse systems, general
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8651	Bag failures and rebagging
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8652	Shakers and rappers
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8653	Inflation and deflation fans and motors

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Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8654	Baghouse booster fans and motors
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8655	Structural duct work and dampers
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8656	Controls and instrumentation
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8657	Ash handling system and hoppers
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8658	Slurry system from precipitators
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8670	Emission monitors (other than CEMS)
Fossil-Steam	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8699	Other miscellaneous pollution control equipment problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-74 Pollution Control Equipment: NOx Reduction Systems - Catalytic Air Heaters

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8830	CAH NOx Active catalyst
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8831	CAH NOx Support materials
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8832	CAH NOx Plugging
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8835	Other CAH problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use code 360 for Low NOx Burners.

TABLE B08-75 Pollution Control Equipment: NOx Reduction Systems - Selective Catalytic Reduction Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8810	SCR NOx Reactor
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8811	SCR NOx Reagent
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8812	SCR NOx Catalyst

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Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8813	SCR NOx Injection grid piping/valves
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8814	SCR NOx Catalyst support material
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8815	SCR NOx Soot blowers
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8816	SCR NOx Plugging
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8817	SCR NOx Control system
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8820	SCR NOx Ammonia injection grid piping/valves
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8821	SCR NOx Ammonia tanks, piping and valves (not injection)
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8822	SCR NOx Ammonia air blowers
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8823	SCR NOx Other ammonia system problems
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8825	Other SCR NOx problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use code 360 for Low NOx Burners.

TABLE B08-76 Pollution Control Equipment: NOx Reduction Systems - Selective Non-Catalytic Reduction Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8800	SNCR NOx Reagent
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8801	SNCR NOx Carrier gas
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8802	SNCR NOx Control system
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8803	SNCR Performance Testing
Fossil-Steam	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8809	Other SNCR NOx problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use code 360 for Low NOx Burners.

TABLE B08-77 Pollution Control Equipment: Precipitators

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Precipitators		8550	Electrostatic precipitator fouling
Fossil-Steam	Pollution Control Equipment	Precipitators		8551	Electrostatic precipitator field out of service
Fossil-Steam	Pollution Control Equipment	Precipitators		8560	Electrostatic precipitator problems
Fossil-Steam	Pollution Control Equipment	Precipitators		8570	Mechanical precipitator fouling
Fossil-Steam	Pollution Control Equipment	Precipitators		8580	Mechanical precipitator problems
Fossil-Steam	Pollution Control Equipment	Precipitators		8590	Other precipitator problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-78 Pollution Control Equipment: Wet Scrubbers - Chemical Supply

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8000	Chemical feed storage, mill feeders, and conveyors
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8002	Screw conveyors
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8003	Bucket elevators
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8006	Weigh feeders
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8010	Crushers/mills
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8020	Mill slurry tanks supply problems
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8030	Classifiers
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8040	Slurry transfer pumps and motors
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8050	Chemical unavailability
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8099	Other chemical supply problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-79 Pollution Control Equipment: Wet Scrubbers - Miscellaneous (Wet Scrubber)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8400	Scrubber gas discharge reheaters - general
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8402	Scrubber gas discharge reheaters - vibration
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8404	Scrubber gas discharge reheaters - tube leaks
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8406	Scrubber gas discharge reheaters - ducts
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8410	Scrubber instruments and controls
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8415	Liquid level controls
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8420	Heat tracer
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8425	Miscellaneous mechanical failures
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8426	Miscellaneous electrical failures
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8430	Stack damage related to scrubber system
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8440	Major overhaul
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8450	Inspection
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8460	Testing
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8470	SO2 monitor
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8499	Other miscellaneous wet scrubber problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-80 Pollution Control Equipment: Wet Scrubbers - Piping, Ducting, Dampers, and Fans

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8200	Piping
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8210	Valves
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8220	Strainers or filters
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8225	Drain pots
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8230	Ducting
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8235	Demister
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8240	Bypass dampers
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8250	Dampers other than bypass
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8260	Scrubber booster I.D. fan (fan specific to the scrubber)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8261	Scrubber booster I.D. fan drive
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8262	Scrubber booster I.D. fan vibration (fan specific to the scrubber)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8264	Scrubber booster I.D. fan blades (fan specific to the scrubber)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8265	Scrubber booster I.D. fan dampers
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8270	Scrubber booster F.D. fan (fan specific to the scrubber)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8271	Scrubber booster F.D. fan drive
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8272	Scrubber booster F.D. fan vibration (fan specific to the scrubber)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8274	Scrubber booster F.D. fan blades (fan specific to the scrubber)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8275	Scrubber booster F.D. fan dampers

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Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8280	Reagent feed piping
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8290	Demister wash piping assembly
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8299	Other piping, ducting, damper, and fan problems
Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Use code 9510 for outages or deratings required to install pollution control equipment. Use codes 9600 to 9650 only when the pollution control equipment problems are not responsible for exceeding emission limits.					

TABLE B08-81 Pollution Control Equipment: Wet Scrubbers - Waste Disposal and Recovery					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8300	Waste disposal/recovery tanks
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8310	Waste disposal/recovery pumps
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8320	Waste disposal ponds
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8325	Ash disposal problems
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8330	Dewatering equipment (thickener, centrifuge, etc.)
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8335	Dryers
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8340	Centrifuge/vacuum filter
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8345	Calciners
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8349	Other waste disposal and recovery problems
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8399	Solids conveying and mixing system problems
Notes: 1) For use with Unit Codes 100-199 and 600-649.					

TABLE B08-82 Pollution Control Equipment: Wet Scrubbers - Wet Scrubber					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8100	Scrubber/absorber tower or module

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Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8110	Spray nozzles
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8115	Disc scrubber throats
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8120	Spray pumps and motors
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8125	Scrubber recycle (liquid) pumps
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8127	Scrubber recycle (liquid) pump motors
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8130	Recirculation tanks including agitators
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8140	Reaction tanks including agitators
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8150	Tubes
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8160	Mist eliminators/demisters and washdown
Fossil-Steam	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8199	Other scrubber problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

REGULATORY, SAFETY, ENVIRONMENTAL

Use these codes only for events not directly attributable to equipment failures. Inspections or testing of certain equipment due to regulation are reported using the appropriate equipment cause codes, and the fact that it was a regulatory requirement noted in the verbal description section.

TABLE B08-83 Regulatory, Safety, Environmental: Other Operating Environmental Limitations					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9660	Thermal discharge limits - fossil and nuclear
Fossil-Steam	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9670	Noise limits (not for personnel safety) – fossil and nuclear
Fossil-Steam	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9677	Noise limits testing - fossil
Fossil-Steam	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9680	Fish kill - fossil and nuclear

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Fossil-Steam	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9690	Other miscellaneous operational environmental limits - fossil and nuclear
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Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-84 Regulatory, Safety, Environmental: Regulatory

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Regulatory, Safety, Environmental	Regulatory		9504	Regulatory (environmental) proceedings and hearings - regulatory agency initiated
Fossil-Steam	Regulatory, Safety, Environmental	Regulatory		9506	Regulatory (environmental) proceedings and hearings - intervenor initiated
Fossil-Steam	Regulatory, Safety, Environmental	Regulatory		9510	Plant modifications strictly for compliance with new or changed regulatory requirements (scrubbers, cooling towers, etc.)
Fossil-Steam	Regulatory, Safety, Environmental	Regulatory		9520	Oil spill in Gulf of Mexico (OMC)
Fossil-Steam	Regulatory, Safety, Environmental	Regulatory		9590	Miscellaneous regulatory (this code is primarily intended for use with event contribution code 2 to indicate that a regulatory-related factor contributed to the primary cause of the event)

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-85 Regulatory, Safety, Environmental: Safety

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Regulatory, Safety, Environmental	Safety		9700	OSHA-related retrofit or inspection
Fossil-Steam	Regulatory, Safety, Environmental	Safety		9720	Other safety problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-86 Regulatory, Safety, Environmental: Stack Emission

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9600	SO2 stack emissions - fossil
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9610	NOx stack emissions - fossil
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9616	CO stack emissions - fossil
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9620	Particulate stack emissions - fossil
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9630	Opacity - fossil
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9650	Other stack/exhaust emissions - fossil (use codes 9200 to 9290 if fuel quality causes pollution control equipment problems that result in excess stack emissions)
Fossil-Steam	Regulatory, Safety, Environmental	Stack Emission		9656	Other stack or exhaust emissions testing - fossil

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Include exhaust emissions.

STEAM TURBINE

Besides the turbine, this set includes the steam stop/control valves, turbine control system, and the turbine auxiliaries. The extraction steam codes are contained in the Balance of Plant set.

TABLE B08-87 Steam Turbine: Controls					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Controls		4290	Hydraulic system pumps
Fossil-Steam	Steam Turbine	Controls		4291	Hydraulic system coolers
Fossil-Steam	Steam Turbine	Controls		4292	Hydraulic system filters
Fossil-Steam	Steam Turbine	Controls		4293	Hydraulic system pipes and valves
Fossil-Steam	Steam Turbine	Controls		4299	Other hydraulic system problems
Fossil-Steam	Steam Turbine	Controls		4300	Turbine supervisory system (use codes 4290 to 4299 for hydraulic oil)
Fossil-Steam	Steam Turbine	Controls		4301	Turbine governing system
Fossil-Steam	Steam Turbine	Controls		4302	Turbine trip devices (including instruments)

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Fossil-Steam	Steam Turbine	Controls		4303	Exhaust hood and spray controls
Fossil-Steam	Steam Turbine	Controls		4304	Automatic turbine control systems - mechanical
Fossil-Steam	Steam Turbine	Controls		4305	Automatic turbine control systems - mechanical - hydraulic
Fossil-Steam	Steam Turbine	Controls		4306	Automatic turbine control systems - electro-hydraulic - analog
Fossil-Steam	Steam Turbine	Controls		4307	Automatic turbine control systems - electro- hydraulic - digital
Fossil-Steam	Steam Turbine	Controls		4308	Automatic turbine control systems - digital control and monitoring
Fossil-Steam	Steam Turbine	Controls		4309	Other turbine instrument and control problems
Fossil-Steam	Steam Turbine	Controls		4310	Steam Turbine Control System - data highway
Fossil-Steam	Steam Turbine	Controls		4311	Steam Turbine Control System - hardware problems (including card failure)
Fossil-Steam	Steam Turbine	Controls		4312	Steam Turbine Control System - internal and termination wiring
Fossil-Steam	Steam Turbine	Controls		4313	Steam Turbine Control System - logic problems
Fossil-Steam	Steam Turbine	Controls		4314	Steam Turbine Control System - upgrades

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-88 Steam Turbine: High Pressure Turbine					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	High Pressure Turbine		4000	Outer casing
Fossil-Steam	Steam Turbine	High Pressure Turbine		4001	Inner casing
Fossil-Steam	Steam Turbine	High Pressure Turbine		4009	Nozzle bolting
Fossil-Steam	Steam Turbine	High Pressure Turbine		4010	Nozzles and nozzle blocks
Fossil-Steam	Steam Turbine	High Pressure Turbine		4011	Diaphragms
Fossil-Steam	Steam Turbine	High Pressure Turbine		4012	Buckets or blades
Fossil-Steam	Steam Turbine	High Pressure Turbine		4013	Diaphragms unit and shroud type
Fossil-Steam	Steam Turbine	High Pressure Turbine		4014	Bucket or blade fouling
Fossil-Steam	Steam Turbine	High Pressure Turbine		4015	Wheels or spindles
Fossil-Steam	Steam Turbine	High Pressure Turbine		4020	Shaft seals

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Fossil-Steam	Steam Turbine	High Pressure Turbine		4021	Dummy rings
Fossil-Steam	Steam Turbine	High Pressure Turbine		4022	Gland rings
Fossil-Steam	Steam Turbine	High Pressure Turbine		4030	Rotor shaft
Fossil-Steam	Steam Turbine	High Pressure Turbine		4040	Bearings
Fossil-Steam	Steam Turbine	High Pressure Turbine		4041	Thrust bearings
Fossil-Steam	Steam Turbine	High Pressure Turbine		4099	Other high pressure turbine problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-89 Steam Turbine: Intermediate Pressure Turbine

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4100	Outer casing
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4101	Inner casing
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4109	Nozzle bolting
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4110	Nozzles and nozzle blocks
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4111	Diaphragms
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4112	Buckets or blades
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4113	Bucket or blade fouling
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4115	Wheels or spindles
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4120	Shaft seals
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4121	Dummy rings
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4122	Gland rings
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4130	Rotor shaft
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4140	Bearings
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4141	Thrust bearings
Fossil-Steam	Steam Turbine	Intermediate Pressure Turbine		4199	Other intermediate pressure turbine problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-90 Steam Turbine: Low Pressure Turbine

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4200	Outer casing
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4201	Inner casing
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4209	Nozzle bolting
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4210	Nozzles and nozzle blocks
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4211	Diaphragms
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4212	Buckets or blades

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Fossil-Steam	Steam Turbine	Low Pressure Turbine		4213	Bucket or blade fouling
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4215	Wheels or spindles
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4220	Shaft seals
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4221	Dummy rings
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4222	Gland rings
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4230	Rotor shaft
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4240	Bearings
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4241	Thrust bearings
Fossil-Steam	Steam Turbine	Low Pressure Turbine		4250	Other low pressure turbine problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-91 Steam Turbine: Lube Oil

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Lube Oil		4280	Lube oil pumps
Fossil-Steam	Steam Turbine	Lube Oil		4281	Lube oil coolers
Fossil-Steam	Steam Turbine	Lube Oil		4282	Lube oil conditioners
Fossil-Steam	Steam Turbine	Lube Oil		4283	Lube oil system valves and piping
Fossil-Steam	Steam Turbine	Lube Oil		4284	Lube oil pump drive
Fossil-Steam	Steam Turbine	Lube Oil		4289	Other lube oil system problems

Notes: 1) For use with Unit Codes 100-199 and 600-649. 2) Do not include bearing failures due to lube oil.

TABLE B08-92 Steam Turbine: Miscellaneous (Steam Turbine)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4400	Major turbine overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4401	Inspection
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4402	Minor turbine overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4410	Turning gear and motor
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4411	Steam turbine gear box (single shaft configuration)
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4412	Steam turbine clutch (single shaft configuration)
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4415	Shaft coupling mechanism

Appendix B08: Index To Fossil-Steam Unit Cause Codes

Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4420	Vibration of the turbine generator unit that cannot be attributed to a specific cause such as bearings or blades (use this code for balance moves)
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4430	Gland seal system
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4450	Water induction
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4460	Turbine overspeed trip test
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4470	Differential expansion
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4490	Turbine performance testing (use code 9999 for total unit performance testing)
Fossil-Steam	Steam Turbine	Miscellaneous (Steam Turbine)		4499	Other miscellaneous steam turbine problems

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-93 Steam Turbine: Piping

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Piping		4270	Crossover or under piping
Fossil-Steam	Steam Turbine	Piping		4279	Miscellaneous turbine piping

Notes: 1) For use with Unit Codes 100-199 and 600-649.

TABLE B08-94 Steam Turbine: Valves

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fossil-Steam	Steam Turbine	Valves		4260	Main stop valves
Fossil-Steam	Steam Turbine	Valves		4261	Control valves
Fossil-Steam	Steam Turbine	Valves		4262	Intercept valves
Fossil-Steam	Steam Turbine	Valves		4263	Reheat stop valves
Fossil-Steam	Steam Turbine	Valves		4264	Combined intercept valves
Fossil-Steam	Steam Turbine	Valves		4265	Miscellaneous drain and vent valves
Fossil-Steam	Steam Turbine	Valves		4266	Main stop valve testing
Fossil-Steam	Steam Turbine	Valves		4267	Control valve testing
Fossil-Steam	Steam Turbine	Valves		4268	Reheat/intercept valve testing
Fossil-Steam	Steam Turbine	Valves		4269	Other turbine valves (including LP steam admission valves)

Notes: 1) For use with Unit Codes 100-199 and 600-649.