

## Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes

### FLUIDIZED BED COMBUSTION UNITS

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## BALANCE OF PLANT

TABLE B07-1 Balance of Plant: Auxiliary Systems - Auxiliary Steam					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3830	Auxiliary boiler
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3831	Auxiliary steam piping
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3832	Auxiliary steam valves
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3833	Auxiliary steam controls and instruments
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3834	Auxiliary boiler tube leaks
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3835	Auxiliary boiler burner management system
Fluidized Bed	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3836	Steam transfer to other unit
Fluidized Bed	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 650-699.					

TABLE B07-2 Balance of Plant: Auxiliary Systems - Closed Cooling Water Systems					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3820	Closed cooling water pumps and motors
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3821	Closed cooling water piping
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3822	Closed cooling water valves
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3823	Closed cooling water heat exchangers
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3824	Closed cooling water system fouling
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3825	Closed cooling water instrumentation
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3826	Closed cooling water strainer
Fluidized Bed	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3829	Other closed cooling water system problems
Notes: 1) For use with Unit Codes 650-699.					

TABLE B07-3 Balance of Plant: Auxiliary Systems - Fire Protection System					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Auxiliary Systems	Fire Protection System	3860	Fire protection system pumps

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Fluidized Bed	Balance of Plant	Auxiliary Systems	Fire Protection System	3861	Fire protection system piping
Fluidized Bed	Balance of Plant	Auxiliary Systems	Fire Protection System	3862	Fire protection system valves
Fluidized Bed	Balance of Plant	Auxiliary Systems	Fire Protection System	3863	Fire protection system fouling
Fluidized Bed	Balance of Plant	Auxiliary Systems	Fire Protection System	3864	Fire protection system instrumentation and controls
Fluidized Bed	Balance of Plant	Auxiliary Systems	Fire Protection System	3869	Other fire protection system problems

**Notes: 1) For use with Gas Turbine Codes 300-399 or 700-799, Steam Turbine Codes 100-199, and Block Identifier Codes 800-899.**

**TABLE B07-4 Balance of Plant: Auxiliary Systems - Instrument Air**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-5 Balance of Plant: Auxiliary Systems - Low-pressure Gas Compression System**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3870	Fuel Gas Compressor and Motors
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3871	Fuel Gas Compressor Piping
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3872	Fuel Gas Compressor Valves
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3873	Fuel Gas Compressor Heat Exchangers
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3874	Fuel Gas Compressor Controls and Instrumentation
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3875	Fuel Gas Compressor Filters
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3876	Fuel Gas Compressor Fire System
Fluidized Bed	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3879	Fuel Gas Compressor - other

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-6 Balance of Plant: Auxiliary Systems - Miscellaneous (Auxiliary Systems)**

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

**Notes: 1) For use with Unit Codes 650-699.****TABLE B07-7 Balance of Plant: Auxiliary Systems - Open Cooling Water System**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3800	Open cooling water pumps and motors
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3801	Open cooling water piping
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3802	Open cooling water valves
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3803	Open cooling water heat exchangers
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3804	Open cooling water system fouling
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3805	Open cooling water system instrumentation
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3806	Open cooling water strainer
Fluidized Bed	Balance of Plant	Auxiliary Systems	Open Cooling Water System	3809	Other open cooling water problems

**Notes: 1) For use with Unit Codes 650-699.****TABLE B07-8 Balance of Plant: Auxiliary Systems - Seal Air Fans**

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

**Notes: 1) For use with Unit Codes 650-699.****TABLE B07-9 Balance of Plant: Auxiliary Systems - Service Air**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-10 Balance of Plant: Auxiliary Systems - Service Water (Open System)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3810	Service water pumps and motors
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3811	Service water piping
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3812	Service water valves
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3813	Service water heat exchangers
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3814	Service water system fouling
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3815	Service water strainer
Fluidized Bed	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3819	Other service water problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-11 Balance of Plant: Circulating Water Systems**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Circulating Water Systems		3210	Circulating water pumps
Fluidized Bed	Balance of Plant	Circulating Water Systems		3211	Circulating water pump motors
Fluidized Bed	Balance of Plant	Circulating Water Systems		3220	Circulating water piping
Fluidized Bed	Balance of Plant	Circulating Water Systems		3221	Circulating water piping fouling
Fluidized Bed	Balance of Plant	Circulating Water Systems		3230	Circulating water valves
Fluidized Bed	Balance of Plant	Circulating Water Systems		3231	Waterbox
Fluidized Bed	Balance of Plant	Circulating Water Systems		3232	Condenser tube cleaning system including debris filter
Fluidized Bed	Balance of Plant	Circulating Water Systems		3233	Circulating water priming system
Fluidized Bed	Balance of Plant	Circulating Water Systems		3235	Cooling tower booster pump
Fluidized Bed	Balance of Plant	Circulating Water Systems		3236	Cooling tower booster motor
Fluidized Bed	Balance of Plant	Circulating Water Systems		3238	Cooling tower fan motors
Fluidized Bed	Balance of Plant	Circulating Water Systems		3239	Cooling tower fan motors - variable speed
Fluidized Bed	Balance of Plant	Circulating Water Systems		3240	Cooling tower fans

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Fluidized Bed	Balance of Plant	Circulating Water Systems		3241	Cooling tower efficiency below design
Fluidized Bed	Balance of Plant	Circulating Water Systems		3242	Cooling tower fill damage
Fluidized Bed	Balance of Plant	Circulating Water Systems		3243	Cooling tower icing
Fluidized Bed	Balance of Plant	Circulating Water Systems		3244	Cooling tower fires
Fluidized Bed	Balance of Plant	Circulating Water Systems		3245	Other cooling tower problems
Fluidized Bed	Balance of Plant	Circulating Water Systems		3246	Cooling tower fouling
Fluidized Bed	Balance of Plant	Circulating Water Systems		3247	Cooling tower instrumentation
Fluidized Bed	Balance of Plant	Circulating Water Systems		3248	Cooling Tower Overhaul
Fluidized Bed	Balance of Plant	Circulating Water Systems		3250	Circulating water system instruments and controls
Fluidized Bed	Balance of Plant	Circulating Water Systems		3260	Traveling screens
Fluidized Bed	Balance of Plant	Circulating Water Systems		3261	Traveling screen fouling
Fluidized Bed	Balance of Plant	Circulating Water Systems		3269	Circulating water biological conditions (ie, zebra mussels)
Fluidized Bed	Balance of Plant	Circulating Water Systems		3270	Intake system problems other than traveling screens
Fluidized Bed	Balance of Plant	Circulating Water Systems		3271	Intake grating fouling
Fluidized Bed	Balance of Plant	Circulating Water Systems		3272	Circulating water screenwash system
Fluidized Bed	Balance of Plant	Circulating Water Systems		3273	Debris in circulating water from outside sources (leaves, mud, etc.)
Fluidized Bed	Balance of Plant	Circulating Water Systems		3274	Ice blockages at intake structures including frazil ice, sheets, blocks of ice, etc.
Fluidized Bed	Balance of Plant	Circulating Water Systems		3280	High circulating water temperature (not due to season, tower efficiency below design, or other listed equipment problem)
Fluidized Bed	Balance of Plant	Circulating Water Systems		3281	Circulating water tempering system
Fluidized Bed	Balance of Plant	Circulating Water Systems		3282	Circulating water cooling ponds
Fluidized Bed	Balance of Plant	Circulating Water Systems		3285	Circulating water chemistry
Fluidized Bed	Balance of Plant	Circulating Water Systems		3299	Other circulating water system problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-12 Balance of Plant: Condensate System - Low/Intermediate Pressure Heater and Deaerators**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-13 Balance of Plant: Condensate System - Miscellaneous (Condensate System)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3360	Condensate makeup and return (including storage tanks)
Fluidized Bed	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).
Fluidized Bed	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3380	Condensate coolers
Fluidized Bed	Balance of Plant	Condensate System	Miscellaneous (Condensate System)	3399	Other miscellaneous condensate system problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-14 Balance of Plant: Condensate System - Polishers/Chemical Addition**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensate System	Polishers/Chemical Addition	3350	Condensate polishing and filtering systems
Fluidized Bed	Balance of Plant	Condensate System	Polishers/Chemical Addition	3351	Chemical addition systems

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Fluidized Bed	Balance of Plant	Condensate System	Polishers/Chemical Addition	3352	Feedwater chemistry (not specific to condenser, polishers, or chemical addition)
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**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-15 Balance of Plant: Condensate System - Pumps, Piping, and Valves**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3300	Condensate water pre-treatment
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3310	Condensate/hotwell pumps
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3311	Condensate/hotwell pump motor
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3312	Condensate booster pump
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3313	Condensate booster pump motor
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3314	Condensate booster pump motor - variable speed
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3315	Condensate booster pump drive (other than 3313 and 3314)
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3320	Condensate piping
Fluidized Bed	Balance of Plant	Condensate System	Pumps, Piping, and Valves	3330	Condensate valves

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-16 Balance of Plant: Condensing System - Condenser Casing or Shell and Internals**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3120	Tube sheets
Fluidized Bed	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3121	Expansion joint
Fluidized Bed	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3122	Gaskets and seals
Fluidized Bed	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3123	Hot well
Fluidized Bed	Balance of Plant	Condensing System	Condenser Casing or Shell and Internals	3124	Tube sheet fouling
Fluidized Bed	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 650-699.**

**TABLE B07-17 Balance of Plant: Condensing System - Condenser Controls**

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensing System	Condenser Controls	3150	Hot well level controls
Fluidized Bed	Balance of Plant	Condensing System	Condenser Controls	3151	Vacuum pump and air ejector controls
Fluidized Bed	Balance of Plant	Condensing System	Condenser Controls	3152	Air-cooled condenser controls
Fluidized Bed	Balance of Plant	Condensing System	Condenser Controls	3159	Other condensing system controls and instruments
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

TABLE B07-18 Balance of Plant: Condensing System - Condenser Tubes and Support Equipment					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3110	Condenser tube leaks
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3111	Condenser tube fouling shell side
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3112	Condenser tube fouling tube side
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3113	Condenser tube and water box cleaning (including circulating water flow reversal)
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3114	Air-cooled condenser tubes
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3115	Air-cooled condenser pumps
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3116	Air-cooled condenser fans
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3117	Air-cooled condenser fan motors
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3118	Other Air-cooled condenser problems
Fluidized Bed	Balance of Plant	Condensing System	Condenser Tubes and Support Equipment	3119	Other condenser tube casing or shell and internal problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

TABLE B07-19 Balance of Plant: Condensing System - Miscellaneous (Condensing System)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3170	Condenser inspection (use code 3110 to report looking for tube leaks)
Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3171	Air-cooled condenser inspections
Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3180	Major condenser overhaul
Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3185	Water side cathodic protection
Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3186	Auxiliary condenser and associated equipment
Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3190	Air leakage (for losses not attributable to previously noted equipment related codes)
Fluidized Bed	Balance of Plant	Condensing System	Miscellaneous (Condensing System)	3199	Other miscellaneous condensing system problems

**Notes: 1) For use with Unit Codes 650-699.**

TABLE B07-20 Balance of Plant: Condensing System - Vacuum Equipment					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3130	Air ejectors
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3131	Air ejector piping and valves
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3132	Inter and after condensers
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3133	Vacuum pumps
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3134	Vacuum pump piping and valves
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3135	Vacuum pump motor and auxiliaries
Fluidized Bed	Balance of Plant	Condensing System	Vacuum Equipment	3139	Other air extraction system problems - general
Fluidized Bed	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 650-699.**

TABLE B07-21 Balance of Plant: Electrical					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Electrical		3600	Switchyard transformers and associated cooling systems - external (OMC)

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Balance of Plant	Electrical		3601	Switchyard transformers and associated cooling systems - external (not OMC)
Fluidized Bed	Balance of Plant	Electrical		3610	Switchyard circuit breakers - external (not OMC)
Fluidized Bed	Balance of Plant	Electrical		3611	Switchyard circuit breakers - external (OMC)
Fluidized Bed	Balance of Plant	Electrical		3612	Switchyard system protection devices - external (OMC)
Fluidized Bed	Balance of Plant	Electrical		3613	Switchyard system protection devices - external (not OMC)
Fluidized Bed	Balance of Plant	Electrical		3618	Other switchyard equipment - external (not OMC)
Fluidized Bed	Balance of Plant	Electrical		3619	Other switchyard equipment - external (OMC)
Fluidized Bed	Balance of Plant	Electrical		3620	Main transformer
Fluidized Bed	Balance of Plant	Electrical		3621	Unit auxiliaries transformer
Fluidized Bed	Balance of Plant	Electrical		3622	Station service startup transformer
Fluidized Bed	Balance of Plant	Electrical		3623	Auxiliary generators
Fluidized Bed	Balance of Plant	Electrical		3624	Auxiliary generator voltage supply system
Fluidized Bed	Balance of Plant	Electrical		3629	Other switchyard or high voltage system problems - external
Fluidized Bed	Balance of Plant	Electrical		3630	400-700 volt transformers
Fluidized Bed	Balance of Plant	Electrical		3631	400-700 volt circuit breakers
Fluidized Bed	Balance of Plant	Electrical		3632	400-700 volt conductors and buses
Fluidized Bed	Balance of Plant	Electrical		3633	400-700 volt insulators
Fluidized Bed	Balance of Plant	Electrical		3634	400-700 volt protection devices
Fluidized Bed	Balance of Plant	Electrical		3639	Other 400-700 volt problems
Fluidized Bed	Balance of Plant	Electrical		3640	AC instrument power transformers
Fluidized Bed	Balance of Plant	Electrical		3641	AC Circuit breakers
Fluidized Bed	Balance of Plant	Electrical		3642	AC Conductors and buses
Fluidized Bed	Balance of Plant	Electrical		3643	AC Inverters
Fluidized Bed	Balance of Plant	Electrical		3644	AC Protection devices
Fluidized Bed	Balance of Plant	Electrical		3649	Other AC instrument power problems
Fluidized Bed	Balance of Plant	Electrical		3650	DC instrument power battery chargers
Fluidized Bed	Balance of Plant	Electrical		3651	DC circuit breakers
Fluidized Bed	Balance of Plant	Electrical		3652	DC conductors and buses

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Balance of Plant	Electrical		3653	DC protection devices
Fluidized Bed	Balance of Plant	Electrical		3659	Other DC power problems
Fluidized Bed	Balance of Plant	Electrical		3660	4000-7000 volt transformers
Fluidized Bed	Balance of Plant	Electrical		3661	4000-7000 volt circuit breakers
Fluidized Bed	Balance of Plant	Electrical		3662	4000-7000 volt conductors and buses
Fluidized Bed	Balance of Plant	Electrical		3663	4000-7000 volt insulators
Fluidized Bed	Balance of Plant	Electrical		3664	4000-7000 volt protection devices
Fluidized Bed	Balance of Plant	Electrical		3669	Other 4000-7000 volt problems
Fluidized Bed	Balance of Plant	Electrical		3670	12-15kV transformers
Fluidized Bed	Balance of Plant	Electrical		3671	12-15kV circuit breakers
Fluidized Bed	Balance of Plant	Electrical		3672	12-15kV conductors and buses
Fluidized Bed	Balance of Plant	Electrical		3673	12-15kV insulators
Fluidized Bed	Balance of Plant	Electrical		3674	12-15kV protection devices
Fluidized Bed	Balance of Plant	Electrical		3679	Other 12-15kV problems
Fluidized Bed	Balance of Plant	Electrical		3680	Other voltage transformers
Fluidized Bed	Balance of Plant	Electrical		3681	Other voltage circuit breakers
Fluidized Bed	Balance of Plant	Electrical		3682	Other voltage conductors and buses
Fluidized Bed	Balance of Plant	Electrical		3683	Other voltage insulators
Fluidized Bed	Balance of Plant	Electrical		3684	Other voltage protection devices
Fluidized Bed	Balance of Plant	Electrical		3689	Other voltage problems
Fluidized Bed	Balance of Plant	Electrical		3690	Station Service Power Distribution System, General

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-22 Balance of Plant: Extraction Steam**

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

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

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

**Notes: 1) For use with Unit Codes 650-699.**

<b>TABLE B07-23 Balance of Plant: Feedwater System</b>					
<b>UNIT TYPE</b>	<b>SYSTEM</b>	<b>COMPONENT</b>	<b>SUB-COMPONENT</b>	<b>CAUSE CODE</b>	<b>DESCRIPTION</b>
Fluidized Bed	Balance of Plant	Feedwater System		3401	Startup feedwater pump
Fluidized Bed	Balance of Plant	Feedwater System		3402	Startup feedwater pump drives - all types
Fluidized Bed	Balance of Plant	Feedwater System		3407	Feedwater pump suction screens
Fluidized Bed	Balance of Plant	Feedwater System		3408	Feedwater pump drive - local controls
Fluidized Bed	Balance of Plant	Feedwater System		3409	Feedwater pump drive motor - variable speed
Fluidized Bed	Balance of Plant	Feedwater System		3410	Feedwater pump
Fluidized Bed	Balance of Plant	Feedwater System		3411	Feedwater pump drive - motor
Fluidized Bed	Balance of Plant	Feedwater System		3412	Feedwater pump drive - steam turbine
Fluidized Bed	Balance of Plant	Feedwater System		3413	Feedwater pump coupling and drive shaft
Fluidized Bed	Balance of Plant	Feedwater System		3414	Feedwater pump local controls
Fluidized Bed	Balance of Plant	Feedwater System		3415	Feedwater pump/drive lube oil system
Fluidized Bed	Balance of Plant	Feedwater System		3416	Other feedwater pump problems
Fluidized Bed	Balance of Plant	Feedwater System		3417	Feedwater pump drive - main shaft
Fluidized Bed	Balance of Plant	Feedwater System		3418	Feedwater pump drive - other
Fluidized Bed	Balance of Plant	Feedwater System		3419	Feedwater pump drive - gear
Fluidized Bed	Balance of Plant	Feedwater System		3420	Feedwater piping and supports
Fluidized Bed	Balance of Plant	Feedwater System		3430	Feedwater regulating (boiler level control) valve
Fluidized Bed	Balance of Plant	Feedwater System		3431	Other feedwater valves
Fluidized Bed	Balance of Plant	Feedwater System		3439	HP heater head leaks
Fluidized Bed	Balance of Plant	Feedwater System		3440	High pressure heater tube leaks

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Balance of Plant	Feedwater System		3441	Other high pressure heater problems (see condensate system for LP and IP heater codes)
Fluidized Bed	Balance of Plant	Feedwater System		3451	Feedwater booster pump suction screens
Fluidized Bed	Balance of Plant	Feedwater System		3452	Feedwater booster pump drive - local controls
Fluidized Bed	Balance of Plant	Feedwater System		3453	Feedwater booster pump drive motor - variable speed
Fluidized Bed	Balance of Plant	Feedwater System		3454	Feedwater booster pump
Fluidized Bed	Balance of Plant	Feedwater System		3455	Feedwater booster pump drive - motor
Fluidized Bed	Balance of Plant	Feedwater System		3456	Feedwater booster pump drive - steam turbine
Fluidized Bed	Balance of Plant	Feedwater System		3457	Feedwater booster pump coupling and drive shaft
Fluidized Bed	Balance of Plant	Feedwater System		3458	Feedwater booster pump local controls
Fluidized Bed	Balance of Plant	Feedwater System		3459	Feedwater booster pump/drive lube oil system
Fluidized Bed	Balance of Plant	Feedwater System		3460	Other feedwater booster pump problems
Fluidized Bed	Balance of Plant	Feedwater System		3461	Feedwater booster pump drive - main shaft
Fluidized Bed	Balance of Plant	Feedwater System		3462	Feedwater booster pump drive - other
Fluidized Bed	Balance of Plant	Feedwater System		3463	Feedwater booster pump drive - gear
Fluidized Bed	Balance of Plant	Feedwater System		3499	Other feedwater system problems

**Notes: 1) For use with Unit Codes 650-699. 2) Excluding extraction or drain systems.**

**TABLE B07-24 Balance of Plant: Heater Drain Systems**

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

**Notes: 1) For use with Unit Codes 650-699.**



TABLE B07-25 Balance of Plant: Miscellaneous (Balance of Plant)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3950	Process computer
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3960	Thermal derating (thermal efficiency losses in balance of plant when specific cause(s) unknown)
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3970	Distributive Control System (DCS) - process computer
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3971	DCS - data highway
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3972	DCS - hardware problems (including card failure)
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3973	DCS - internal and termination wiring
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3974	DCS - logic problems
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3975	DCS - upgrades
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3979	Other DCS problems
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3980	Programmable Logic Controller (PLC)
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3981	PLC - data highway
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3982	PLC - hardware problems (including card failure)
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3983	PLC - internal and termination wiring
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3984	PLC - logic problems
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3985	PLC - upgrades
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3989	Other PLC problems
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3995	Powerhouse heating and ventilating systems
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3996	Air conditioning systems - rooms and areas
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3998	Balance of plant overhaul/outage
Fluidized Bed	Balance of Plant	Miscellaneous (Balance of Plant)		3999	Other miscellaneous balance of plant problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

TABLE B07-26 Balance of Plant: Power Station Switchyard					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Power Station Switchyard		3700	Power Station switchyard (non generating unit equipment)

Fluidized Bed	Balance of Plant	Power Station Switchyard		3710	Transmission line (connected to powerhouse switchyard to 1st Substation)
Fluidized Bed	Balance of Plant	Power Station Switchyard		3720	Transmission equipment at the 1st substation (see code 9300 if applicable)
Fluidized Bed	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 650-699.**

TABLE B07-27 Balance of Plant: Waste Water (zero discharge) Systems					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Balance of Plant	Waste Water (zero discharge) Systems		3290	Waste water (zero discharge) tanks, pumps, and motors
Fluidized Bed	Balance of Plant	Waste Water (zero discharge) Systems		3291	Waste water (zero discharge) system fouling
Fluidized Bed	Balance of Plant	Waste Water (zero discharge) Systems		3292	Waste water (zero discharge) piping
Fluidized Bed	Balance of Plant	Waste Water (zero discharge) Systems		3293	Waste water (zero discharge) valves
Fluidized Bed	Balance of Plant	Waste Water (zero discharge) Systems		3294	Waste water (zero discharge) controls and instrumentation
Fluidized Bed	Balance of Plant	Waste Water (zero discharge) Systems		3295	Other waste water (zero discharge) problems

**Notes: 1) For use with Unit Codes 650-699.**

## BOILER

This set of codes contains the following:

- Boiler.
- Boiler internals (tubes, refractory, supports, etc.) .
- All the fuel handling, storage fuel 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 B07-28 Boiler: Bed Material Preparation System (FBC only)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		160	Bed material tanks/hoppers
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		162	Bed material conveyors
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		163	Bed material feeders
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		164	Bed material feeder motors
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		165	Bed material crushers
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		166	Bed material crusher motors
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		167	Bed material screens
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		168	Bed material blowers/fans
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		169	Bed material blower/fan motors
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		170	Bed material cyclone
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		171	Bed material baghouse
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		172	Bed material drying equipment
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		173	Bed material pneumatic transport system including piping and valves
Fluidized Bed	Boiler	Bed Material Preparation System (FBC only)		174	Other bed material handling equipment

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-29 Boiler: Bed Material Removal System**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Bed Material Removal System		930	Bed material coolers
Fluidized Bed	Boiler	Bed Material Removal System		931	Bed material transport piping/valves
Fluidized Bed	Boiler	Bed Material Removal System		932	Bed material transport tanks/hoppers

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Fluidized Bed	Boiler	Bed Material Removal System		933	Bed material fans/blowers
Fluidized Bed	Boiler	Bed Material Removal System		934	Bed material fan/blower motors
Fluidized Bed	Boiler	Bed Material Removal System		935	Bed material disposal conditioner
Fluidized Bed	Boiler	Bed Material Removal System		936	Bed material conveyors
Fluidized Bed	Boiler	Bed Material Removal System		937	Bed material mechanical separators and baghouse
Fluidized Bed	Boiler	Bed Material Removal System		950	Other bed material system problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-30 Boiler: Bed Solids Recirculation**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Bed Solids Recirculation		951	Char reinjection feeders
Fluidized Bed	Boiler	Bed Solids Recirculation		952	Char reinjection piping/valves
Fluidized Bed	Boiler	Bed Solids Recirculation		953	Char reinjection controls
Fluidized Bed	Boiler	Bed Solids Recirculation		959	Other char reinjection equipment problems
Fluidized Bed	Boiler	Bed Solids Recirculation		960	Char transport piping and valves
Fluidized Bed	Boiler	Bed Solids Recirculation		961	Char transfer tanks/hoppers
Fluidized Bed	Boiler	Bed Solids Recirculation		962	Char conditioner
Fluidized Bed	Boiler	Bed Solids Recirculation		969	Other char equipment problems
Fluidized Bed	Boiler	Bed Solids Recirculation		970	Flue gas-solids separator
Fluidized Bed	Boiler	Bed Solids Recirculation		971	Flue gas-solids separator piping and valves
Fluidized Bed	Boiler	Bed Solids Recirculation		972	Flue gas-solids separator controls
Fluidized Bed	Boiler	Bed Solids Recirculation		973	Flue gas-solids separator refractory
Fluidized Bed	Boiler	Bed Solids Recirculation		980	High pressure loop seal recirculation fans/blowers
Fluidized Bed	Boiler	Bed Solids Recirculation		981	High pressure loop seal recirculation fan/blower motors
Fluidized Bed	Boiler	Bed Solids Recirculation		982	High pressure loop seal recirculation fan/blower controls
Fluidized Bed	Boiler	Bed Solids Recirculation		989	Other bed solids recirculation problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-31 Boiler: Boiler Air and Gas Systems - Air Supply**

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1400	Forced draft fans*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1401	Forced draft fan dampers
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1407	Forced draft fan lubrication system*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1410	Forced draft fan motors*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1411	Forced draft fan motors - variable speed*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1412	Forced draft fan drives (other than motor)*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1413	Forced draft fan couplings
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1415	Forced draft fan controls*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1420	Other forced draft fan problems*
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1421	Secondary air fans/blowers
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1422	Secondary air fan/blower motors - single speed
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1423	Secondary air fan/blower motors - variable speed
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1424	Secondary air fan/blower controls
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1430	Air supply ducts from FD fan
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1431	Air supply dampers from FD fan
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1432	Air supply duct expansion joints
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1440	Air supply dampers
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1450	Other air supply problems
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Air Supply	1451	Fluidized Air Fan (FBC Only)
<b>Notes: 1) For use with Unit Codes 650-699. 2) Excluding burner pipes, wind boxes, primary air, or pulverize exhausters. 3) * For FBC units, this is the same as primary air fans and their motors.</b>					

TABLE B07-32 Boiler: Boiler Air and Gas Systems - Flue Gas					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Flue Gas	1455	Induced draft fans
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Flue Gas	1456	Induced draft fan dampers
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Flue Gas	1457	Induced draft fan lubrication systems
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Flue Gas	1460	Induced draft fan fouling
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Flue Gas	1470	Induced draft fan motors and drives
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Flue Gas	1471	Induced draft fan motors - variable speed

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

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

**Notes: 1) For use with Unit Codes 650-699. 2) Excluding burner pipes, wind boxes, primary air, or pulverize exhausters.**

**TABLE B07-33 Boiler: Boiler Air and Gas Systems - Flue Gas Recirculation**

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

**Notes: 1) For use with Unit Codes 650-699. 2) Excluding burner pipes, wind boxes, primary air, or pulverize exhausters.**

**TABLE B07-34 Boiler: Boiler Air and Gas Systems - Miscellaneous (Boiler Air and Gas Systems)**

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	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)
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1591	Stack damper and linkage
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1592	Stack damper linkage motors
Fluidized Bed	Boiler	Boiler Air and Gas Systems	Miscellaneous (Boiler Air and Gas Systems)	1599	Other miscellaneous boiler air and gas system problems
<b>Notes: 1) For use with Unit Codes 650-699. 2) Excluding burner pipes, wind boxes, primary air, or pulverize exhausters.</b>					

<b>TABLE B07-35 Boiler: Boiler Control Systems</b>					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Control Systems		1700	Feedwater controls (report local controls - feedwater pump, feedwater regulator valve, etc., - with component or system)
Fluidized Bed	Boiler	Boiler Control Systems		1710	Combustion/steam condition controls (report local controls - burners, pulverizers, etc., - with component or system)
Fluidized Bed	Boiler	Boiler Control Systems		1720	Desuperheater/attenuator controls
Fluidized Bed	Boiler	Boiler Control Systems		1730	Boiler explosion or implosion
Fluidized Bed	Boiler	Boiler Control Systems		1740	Boiler drum gage glasses / level indicator
Fluidized Bed	Boiler	Boiler Control Systems		1741	Furnace and water gauge television auxiliary system
Fluidized Bed	Boiler	Boiler Control Systems		1750	Burner management system
Fluidized Bed	Boiler	Boiler Control Systems		1760	Feedwater instrumentation (not local controls)
Fluidized Bed	Boiler	Boiler Control Systems		1761	Combustion/Steam condition instrumentation (not local controls)
Fluidized Bed	Boiler	Boiler Control Systems		1762	Desuperheater/attenuator instrumentation (not local controls)
Fluidized Bed	Boiler	Boiler Control Systems		1799	Other boiler instrumentation and control problems

**Notes: 1) For use with Unit Codes 650-699. 2) Including instruments that input to the controls.**

**TABLE B07-36 Boiler: Boiler Design Limitations**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-37 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Burners**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	358	Oil burner piping and valves
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	359	Gas burner piping and valves
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	360	Burners
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	361	Burner orifices
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	362	Burner tilts
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	365	Bed warmup burners (FBC only)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	366	Duct burners (FBC only)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	370	Burner instruments and controls (except light off)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	375	Burner instruments and controls (FBC light-off system)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	380	Light off (igniter) systems (including fuel supply)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	385	Igniters
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	390	Burner wind boxes and dampers
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	400	Burner wind box fires
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Burners	410	Other burner problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-38 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Cyclone**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	415	Cyclone feeders
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	420	Cyclone crusher



**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	425	Cyclone dampers
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	426	Cyclone air ducts
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	430	Cyclone furnace
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Cyclone	435	Other cyclone problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-39 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Oil and Gas Systems (except light off)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	440	Fuel oil pumps (general)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	441	Fuel oil pumps (burner supply)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	442	Fuel oil pumps (forwarding/transfer)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	443	Fuel oil (burner supply) pump drives
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	444	Fuel oil (forwarding/transfer) pump drives
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	450	Fuel oil heaters
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	460	Fuel oil atomizers
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	470	Oil and gas fires
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Oil and Gas Systems (except light off)	475	Fuel lance (FBC only)
Fluidized Bed	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 650-699.**

**TABLE B07-40 Boiler: Boiler Fuel Supply from Bunkers to Boiler - Pulverizers, Primary Air Fans, and Associated Ducts**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	200	Pulverizer exhaust fan (for indirect firing)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	205	Pulverizer exhaust fan drive

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	210	Pulverizer heater (for indirect firing)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	220	Pulverizer system cyclone separator
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	230	Pulverizer bag filter
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	240	Pulverized coal bin
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	250	Pulverizer feeders
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	253	Pulverizer feeder motor
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	255	Pulverizer feeder coal scales
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	256	Seal air system (air to pulverizers)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	260	Primary air fan
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	262	Primary air fan lube oil system
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	263	Primary air fan drives
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	264	Other primary air fan problems
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	265	Primary air heater
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	266	Primary air heater fouling
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	267	Primary air flow instrumentation
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	270	Primary air duct and dampers
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	280	Pulverizer fires
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	290	Pulverizer reduced capacity due to wear
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	300	Pulverizer motors and drives

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	310	Pulverizer mills
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	312	Pulverizer mill classifiers
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	313	Pulverizer mill trunnion seals
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	314	Pulverizer mill ball charger hopper (ball mills only)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	315	Pulverizer mill coal level controls
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	320	Foreign object in Pulverizers mill
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	325	Pulverizer skidding
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	330	Pulverizer coal leak (pulverizers only)
Fluidized Bed	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)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	335	Pulverizer lube oil system
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	338	Pulverizer control systems (temperature and pressure)
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	340	Other pulverizer problems
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	344	Pulverizer inspection
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	345	Pulverizer overhaul
Fluidized Bed	Boiler	Boiler Fuel Supply from Bunkers to Boiler	Pulverizers, Primary Air Fans, and Associated Ducts	346	Pulverizer pyrite removal system
Fluidized Bed	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 650-699.**

**TABLE B07-41 Boiler: Boiler Fuel Supply to Bunker - Coal Handling Equipment up Through Bunkers**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
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**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	10	Thaw shed failure or fire
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	20	Coal car dumpers, shakers, and unloaders
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	22	Unloading/receiving hopper (train/truck)
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	24	Rotary plow
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	26	Dust suppression system
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	28	Dust collection system
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	30	Coal conveyors and feeders
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	35	Metal detector/collector (including magnetic separator)
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	40	Coal elevators
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	50	Coal storage fires
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	60	Coal crushers including motors
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	70	Coal samplers
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	75	Storage silos/hoppers
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	80	Stackers/reclaimers
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	84	Coal conveyor scales storage coal pile
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	85	Bunker feeder coal scales
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	90	Bunker fires
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	95	Bunker flow problems
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	100	Bunker gates

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	105	Bunker structures
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	106	Coal drying system (see additional codes 0125-0127)
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	107	Screen (prior to bunkers)
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	110	Other coal fuel supply problems up through bunkers
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	125	Coal crusher dryer hammers (see code 0106)
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	126	Coal crusher lube oil system (see code 0106)
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Coal Handling Equipment up Through Bunkers	127	Other coal crusher dryer problems (see code 0106)

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-42 Boiler: Boiler Fuel Supply to Bunker - Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	111	Solid fuel feeder conveyors
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	112	Solid fuel feed tanks/hoppers
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	113	Solid fuel tank/hopper fires
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	114	Solid fuel volumetric feeder
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	115	Solid fuel gravimetric feeder
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	116	Solid fuel feeder motors
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	117	Solid fuel pneumatic transport system including piping and valves
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	118	Solid fuel drying system including screens
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	119	Solid fuel crushers
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	120	Solid fuel crusher motors

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	121	Other solid fuel feed problems
Fluidized Bed	Boiler	Boiler Fuel Supply to Bunker	Solid Fuel Feed Equipment from Bunkers to Boiler (FBC only)	129	Other coal processing system problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-43 Boiler: Boiler Internals and Structures**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Internals and Structures		800	Drums and drum internals (single drum only)
Fluidized Bed	Boiler	Boiler Internals and Structures		810	Boiler supports and structures (use code 1320 for tube supports)
Fluidized Bed	Boiler	Boiler Internals and Structures		811	Convection pass enclosure (FBC only)
Fluidized Bed	Boiler	Boiler Internals and Structures		812	Distribution plate (FBC only)
Fluidized Bed	Boiler	Boiler Internals and Structures		813	Lower furnace (in-bed) tube supports (FBC only)
Fluidized Bed	Boiler	Boiler Internals and Structures		814	In-bed bubble caps (FBC only)
Fluidized Bed	Boiler	Boiler Internals and Structures		820	Casing
Fluidized Bed	Boiler	Boiler Internals and Structures		830	Doors
Fluidized Bed	Boiler	Boiler Internals and Structures		840	Refractory and insulation
Fluidized Bed	Boiler	Boiler Internals and Structures		845	Windbox expansion joints
Fluidized Bed	Boiler	Boiler Internals and Structures		846	Convection pass expansion joints (FBC only)
Fluidized Bed	Boiler	Boiler Internals and Structures		847	Other expansion joints
Fluidized Bed	Boiler	Boiler Internals and Structures		850	Other internal or structural problems
Fluidized Bed	Boiler	Boiler Internals and Structures		855	Drum relief/safety valves (single drum only)
Fluidized Bed	Boiler	Boiler Internals and Structures		859	Tube external fins/membranes

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-44 Boiler: Boiler Overhaul and Inspections**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Overhaul and Inspections		1800	Major boiler overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Overhaul and Inspections		1801	Minor boiler overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Fluidized Bed	Boiler	Boiler Overhaul and Inspections		1810	Other boiler inspections
Fluidized Bed	Boiler	Boiler Overhaul and Inspections		1811	Boiler Inspections - problem identification / investigation
Fluidized Bed	Boiler	Boiler Overhaul and Inspections		1812	Boiler Inspections - scheduled or routine
Fluidized Bed	Boiler	Boiler Overhaul and Inspections		1820	Chemical cleaning/steam blows

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-45 Boiler: Boiler Piping System - Boiler Recirculation**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-46 Boiler: Boiler Piping System - Cold and Hot Reheat Steam**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-47 Boiler: Boiler Piping System - Desuperheaters/Attemperators**

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

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

**Notes: 1) For use with Unit Codes 650-699.**

TABLE B07-48 Boiler: Boiler Piping System - Feedwater and Blowdown					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Piping System	Feedwater and Blowdown	670	Feedwater piping downstream of feedwater regulating valve
Fluidized Bed	Boiler	Boiler Piping System	Feedwater and Blowdown	680	Feedwater valves (not feedwater regulating valve)
Fluidized Bed	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)
Fluidized Bed	Boiler	Boiler Piping System	Feedwater and Blowdown	700	Blowdown system valves
Fluidized Bed	Boiler	Boiler Piping System	Feedwater and Blowdown	710	Blowdown system piping
Fluidized Bed	Boiler	Boiler Piping System	Feedwater and Blowdown	720	Blowdown system controls / instrumentation
Fluidized Bed	Boiler	Boiler Piping System	Feedwater and Blowdown	730	Other blowdown system problems

**Notes: 1) For use with Unit Codes 650-699.**

TABLE B07-49 Boiler: Boiler Piping System - Main Steam					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Piping System	Main Steam	500	Main steam piping up to turbine stop valves
Fluidized Bed	Boiler	Boiler Piping System	Main Steam	510	Main steam relief/safety valves off superheater
Fluidized Bed	Boiler	Boiler Piping System	Main Steam	520	Other main steam valves (including vent and drain valves but not including the turbine stop valves)



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Fluidized Bed	Boiler	Boiler Piping System	Main Steam	530	Other main steam system problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

**TABLE B07-50 Boiler: Boiler Piping System - Miscellaneous (Piping)**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-51 Boiler: Boiler Piping System - Startup Bypass**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Piping System	Startup Bypass	630	Startup bypass system piping (including drain lines up to heaters or condenser)
Fluidized Bed	Boiler	Boiler Piping System	Startup Bypass	640	Startup bypass system valves
Fluidized Bed	Boiler	Boiler Piping System	Startup Bypass	650	Startup bypass tanks or flash tanks
Fluidized Bed	Boiler	Boiler Piping System	Startup Bypass	655	Steam by-pass system instrumentation and controls
Fluidized Bed	Boiler	Boiler Piping System	Startup Bypass	660	Other startup bypass system problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-52 Boiler: Boiler Tube Fireside Slagging or Fouling**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1100	Waterwall (Furnace wall)
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1105	Generating tubes
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1110	Cyclone Furnace (in cyclone area only)
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1120	Convection Pass Wall
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1130	Boiler screen, wing wall, or slag screen (water tubes only)
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1140	First superheater

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1150	Second superheater
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1160	First reheater
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1170	Second reheater
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1180	Economizer
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1190	Other tube slagging or fouling
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1191	Bed agglomeration (FBC only)
Fluidized Bed	Boiler	Boiler Tube Fireside Slagging or Fouling		1200	Operation at reduced power to avoid slagging or fouling (use codes 1100 to 1190 to report power reductions for slag accumulation or slag removal)

**Notes: 1) For use with Unit Codes 650-699. 2) Use codes 0860 and 0870 for fouling or slagging due to unavailability of soot blowers or their air or steam supply.**

**TABLE B07-53 Boiler: Boiler Tube Leaks**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Boiler Tube Leaks		1000	Waterwall (Furnace wall)
Fluidized Bed	Boiler	Boiler Tube Leaks		1005	Generating tubes
Fluidized Bed	Boiler	Boiler Tube Leaks		1006	In-bed reheat tubes (FBC only - includes external heat exchangers)
Fluidized Bed	Boiler	Boiler Tube Leaks		1010	Cyclone furnace (in cyclone area only)
Fluidized Bed	Boiler	Boiler Tube Leaks		1020	Convection pass wall (water tubes only)
Fluidized Bed	Boiler	Boiler Tube Leaks		1030	Boiler screen, wing wall, or slag screen (water tubes only)
Fluidized Bed	Boiler	Boiler Tube Leaks		1035	Platen superheater
Fluidized Bed	Boiler	Boiler Tube Leaks		1040	First superheater
Fluidized Bed	Boiler	Boiler Tube Leaks		1045	In-bed superheater tubes (FBC only - includes external heat exchangers)
Fluidized Bed	Boiler	Boiler Tube Leaks		1050	Second superheater
Fluidized Bed	Boiler	Boiler Tube Leaks		1055	External superheater link tubing
Fluidized Bed	Boiler	Boiler Tube Leaks		1060	First reheater
Fluidized Bed	Boiler	Boiler Tube Leaks		1070	Second reheater
Fluidized Bed	Boiler	Boiler Tube Leaks		1075	External reheater link tubing
Fluidized Bed	Boiler	Boiler Tube Leaks		1080	Economizer
Fluidized Bed	Boiler	Boiler Tube Leaks		1085	In-bed evaporative tubes (FBC only - includes external heat exchangers)
Fluidized Bed	Boiler	Boiler Tube Leaks		1090	Other boiler tube leaks

**Notes: 1) For use with Unit Codes 650-699. 2) Use code 0859 for tube/membrane failures.**

**TABLE B07-54 Boiler: Boiler Water Condition**

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

**Notes: 1) For use with Unit Codes 650-699.****TABLE B07-55 Boiler: External Fluidized Bed Heat Exchanger**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	External Fluidized Bed Heat Exchanger		990	Refractory
Fluidized Bed	Boiler	External Fluidized Bed Heat Exchanger		991	Tube leaks
Fluidized Bed	Boiler	External Fluidized Bed Heat Exchanger		992	Tube supports
Fluidized Bed	Boiler	External Fluidized Bed Heat Exchanger		999	Other heat exchanger problems

**Notes: 1) For use with Unit Codes 650-699.****TABLE B07-56 Boiler: Miscellaneous (Boiler)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Miscellaneous (Boiler)		1980	Boiler safety valve test
Fluidized Bed	Boiler	Miscellaneous (Boiler)		1990	Boiler performance testing (use code 9999 for total unit performance testing)
Fluidized Bed	Boiler	Miscellaneous (Boiler)		1999	Boiler, miscellaneous

**Notes: 1) For use with Unit Codes 650-699. 2) Use more specific codes - other slagging and fouling problems, other control problems, etc. - whenever possible. Describe miscellaneous problems in the verbal description.**

**TABLE B07-57 Boiler: Miscellaneous Boiler Tube Problems**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1300	Water side fouling
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1305	Fireside cleaning (which requires a full outage) Use code 1200 for cleanings that cause deratings.
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1310	Water side cleaning (acid cleaning)
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1320	Tube supports/attachments
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1330	Slag fall damage

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Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1340	Tube modifications (including addition and removal of tubes)
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1350	Other miscellaneous boiler tube problems
Fluidized Bed	Boiler	Miscellaneous Boiler Tube Problems		1360	Boiler drains system
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

<b>TABLE B07-58 Boiler: Slag and Ash Removal</b>					
<b>UNIT TYPE</b>	<b>SYSTEM</b>	<b>COMPONENT</b>	<b>SUB-COMPONENT</b>	<b>CAUSE CODE</b>	<b>DESCRIPTION</b>
Fluidized Bed	Boiler	Slag and Ash Removal		860	Soot blowers - air (see code 3844 for air delivery system)
Fluidized Bed	Boiler	Slag and Ash Removal		870	Soot blowers - steam
Fluidized Bed	Boiler	Slag and Ash Removal		871	Soot blowers - sonic
Fluidized Bed	Boiler	Slag and Ash Removal		872	Soot blowers - water
Fluidized Bed	Boiler	Slag and Ash Removal		873	Soot blower drives
Fluidized Bed	Boiler	Slag and Ash Removal		876	Soot blower controls
Fluidized Bed	Boiler	Slag and Ash Removal		880	Fly Ash Removal System (not precipitators, scrubbers, mechanical collectors, or baghouses)
Fluidized Bed	Boiler	Slag and Ash Removal		885	Fly ash Removal System - wet transport
Fluidized Bed	Boiler	Slag and Ash Removal		890	Bottom ash systems (wet or dry)
Fluidized Bed	Boiler	Slag and Ash Removal		891	Bottom ash hoppers (including gates)
Fluidized Bed	Boiler	Slag and Ash Removal		892	Bottom ash clinker grinders
Fluidized Bed	Boiler	Slag and Ash Removal		893	Bottom ash water pumps and motors
Fluidized Bed	Boiler	Slag and Ash Removal		894	Bottom ash piping and valves
Fluidized Bed	Boiler	Slag and Ash Removal		895	Ashpit trouble
Fluidized Bed	Boiler	Slag and Ash Removal		896	Bottom ash dewatering bin system, instruments and controls
Fluidized Bed	Boiler	Slag and Ash Removal		897	Bottom ash rotary (drag chain type) conveyor and motor
Fluidized Bed	Boiler	Slag and Ash Removal		898	Bottom ash pyrite hopper (pulverizer reject) system
Fluidized Bed	Boiler	Slag and Ash Removal		899	Bottom ash controls and instrumentation
Fluidized Bed	Boiler	Slag and Ash Removal		900	Slag tap (cyclone furnace)
Fluidized Bed	Boiler	Slag and Ash Removal		910	Slag tap (other than cyclone furnace)

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Fluidized Bed	Boiler	Slag and Ash Removal		920	Other slag and ash removal problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

<b>TABLE B07-59 Boiler: Sorbent Supply (FBC only) - Sorbent Feed Equipment from Bunkers to Boiler (FBC only)</b>					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	150	Sorbent feed conveyors
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	151	Sorbent feed tanks/hoppers
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	152	Sorbent feed volumetric feeder
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	153	Sorbent feed gravimetric feeder
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	154	Sorbent feed feeder motors
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	155	Sorbent feed pneumatic transport system including piping and valves
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Feed Equipment from Bunkers to Boiler (FBC only)	156	Other sorbent feed problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

<b>TABLE B07-60 Boiler: Sorbent Supply (FBC only) - Sorbent Handling System up Through Bunkers (FBC only)</b>					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	130	Sorbent handling tanks/hoppers
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	131	Sorbent handling conveyors
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	132	Sorbent handling feeders
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	133	Sorbent handling feeder motors
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	134	Sorbent handling crushers
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	135	Sorbent handling crusher motors
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	136	Sorbent handling blowers/fans

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Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	137	Sorbent handling blower/fan motors
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	138	Sorbent handling baghouse
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	139	Sorbent handling drying equipment
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	140	Sorbent handling screens
Fluidized Bed	Boiler	Sorbent Supply (FBC only)	Sorbent Handling System up Through Bunkers (FBC only)	141	Other sorbent handling equipment problems

**Notes: 1) For use with Unit Codes 650-699.**

## 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.

**TABLE B07-61 External: Catastrophe**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	External	Catastrophe		9000	Flood
Fluidized Bed	External	Catastrophe		9001	Drought
Fluidized Bed	External	Catastrophe		9010	Fire including wildfires, not related to a specific component
Fluidized Bed	External	Catastrophe		9020	Lightning
Fluidized Bed	External	Catastrophe		9025	Geomagnetic disturbance
Fluidized Bed	External	Catastrophe		9030	Earthquake
Fluidized Bed	External	Catastrophe		9031	Tornado
Fluidized Bed	External	Catastrophe		9035	Hurricane
Fluidized Bed	External	Catastrophe		9036	Storms (ice, snow, etc)
Fluidized Bed	External	Catastrophe		9040	Other catastrophe

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-62 External: Economic**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	External	Economic		0	Reserve shutdown
Fluidized Bed	External	Economic		9130	Failure of fuel supplier to fulfill contractual obligations or a pre-

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					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.)
Fluidized Bed	External	Economic		9131	Lack of fuel – due to contractual or tariff provisions that allow for service interruption or price fluctuations during peak demand periods.
Fluidized Bed	External	Economic		9132	Wet Fuel - Biomass
Fluidized Bed	External	Economic		9134	Fuel conservation
Fluidized Bed	External	Economic		9136	Problems with Primary Fuel for Units with Secondary Fuel Operation
Fluidized Bed	External	Economic		9137	Ground water or other water supply problems
Fluidized Bed	External	Economic		9140	Plant modifications to burn different fuel that are not regulatory mandated
Fluidized Bed	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.
Fluidized Bed	External	Economic		9151	Labor strikes direct plant management grievances that result in a walkout or strike are under plant management control.
Fluidized Bed	External	Economic		9160	Other economic problems
Fluidized Bed	External	Economic		9180	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9181	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9182	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9183	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9184	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9185	Economic (for internal use at plants only)

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Fluidized Bed	External	Economic		9186	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9187	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9188	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9189	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9190	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9191	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9192	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9193	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9194	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9195	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9196	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9197	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9198	Economic (for internal use at plants only)
Fluidized Bed	External	Economic		9199	Economic (for internal use at plants only)

**Notes: 1) For use with Unit Codes 650-699.**

<b>TABLE B07-63 External: Fuel Quality</b>					
<b>UNIT TYPE</b>	<b>SYSTEM</b>	<b>COMPONENT</b>	<b>SUB-COMPONENT</b>	<b>CAUSE CODE</b>	<b>DESCRIPTION</b>
Fluidized Bed	External	Fuel Quality		9200	High ash content (OMC)
Fluidized Bed	External	Fuel Quality		9201	High ash content (not OMC)
Fluidized Bed	External	Fuel Quality		9205	Poor quality natural gas fuel, low heat content
Fluidized Bed	External	Fuel Quality		9210	Low grindability (OMC)
Fluidized Bed	External	Fuel Quality		9211	Low grindability (not OMC)



Fluidized Bed	External	Fuel Quality		9220	High sulfur content (OMC)
Fluidized Bed	External	Fuel Quality		9221	High sulfur content (not OMC)
Fluidized Bed	External	Fuel Quality		9230	High vanadium content (OMC)
Fluidized Bed	External	Fuel Quality		9231	High vanadium content (not OMC)
Fluidized Bed	External	Fuel Quality		9240	High sodium content (OMC)
Fluidized Bed	External	Fuel Quality		9241	High sodium content (not OMC)
Fluidized Bed	External	Fuel Quality		9250	Low BTU coal (OMC)
Fluidized Bed	External	Fuel Quality		9251	Low BTU coal (not OMC)
Fluidized Bed	External	Fuel Quality		9260	Low BTU oil (OMC)
Fluidized Bed	External	Fuel Quality		9261	Low BTU oil (not OMC)
Fluidized Bed	External	Fuel Quality		9270	Wet coal (OMC)
Fluidized Bed	External	Fuel Quality		9271	Wet coal (not OMC)
Fluidized Bed	External	Fuel Quality		9272	Wet Fuel (other than coal)
Fluidized Bed	External	Fuel Quality		9280	Frozen coal (OMC)
Fluidized Bed	External	Fuel Quality		9281	Frozen coal (not OMC)
Fluidized Bed	External	Fuel Quality		9290	Other fuel quality problems (OMC)
Fluidized Bed	External	Fuel Quality		9291	Other fuel quality problems (not OMC)

**Notes: 1) For use with Unit Codes 650-699. 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 B07-64 External: Miscellaneous (External)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	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)
Fluidized Bed	External	Miscellaneous (External)		9305	Ash disposal problem
Fluidized Bed	External	Miscellaneous (External)		9310	Operator training
Fluidized Bed	External	Miscellaneous (External)		9320	Other miscellaneous external problems
Fluidized Bed	External	Miscellaneous (External)		9340	Synchronous Condenser Operation

**Notes: 1) For use with Unit Codes 650-699.**

## 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 B07-65 Generator: Controls

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UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Generator	Controls		4700	Generator voltage control
Fluidized Bed	Generator	Controls		4710	Generator metering devices
Fluidized Bed	Generator	Controls		4720	Generator synchronization equipment
Fluidized Bed	Generator	Controls		4730	Generator current and potential transformers
Fluidized Bed	Generator	Controls		4740	Emergency generator trip devices
Fluidized Bed	Generator	Controls		4741	Frequncy Trip (81 Relay)
Fluidized Bed	Generator	Controls		4750	Other generator controls and metering problems

**Notes: 1) For use with Unit Codes 650-699.**

TABLE B07-66 Generator: Cooling System					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Generator	Cooling System		4610	Hydrogen cooling system piping and valves
Fluidized Bed	Generator	Cooling System		4611	Hydrogen coolers
Fluidized Bed	Generator	Cooling System		4612	Hydrogen storage system
Fluidized Bed	Generator	Cooling System		4613	Hydrogen seals
Fluidized Bed	Generator	Cooling System		4619	Other hydrogen system problems
Fluidized Bed	Generator	Cooling System		4620	Air cooling system
Fluidized Bed	Generator	Cooling System		4630	Liquid cooling system
Fluidized Bed	Generator	Cooling System		4640	Seal oil system and seals
Fluidized Bed	Generator	Cooling System		4650	Other cooling system problems

**Notes: 1) For use with Unit Codes 650-699. 2) Report failures caused by water leaks into generator as codes 4500, 4510, etc.**

TABLE B07-67 Generator: Exciter					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Generator	Exciter		4600	Exciter drive - motor
Fluidized Bed	Generator	Exciter		4601	Exciter field rheostat
Fluidized Bed	Generator	Exciter		4602	Exciter commutator and brushes
Fluidized Bed	Generator	Exciter		4603	Solid state exciter element
Fluidized Bed	Generator	Exciter		4604	Exciter drive - shaft
Fluidized Bed	Generator	Exciter		4605	Exciter transformer
Fluidized Bed	Generator	Exciter		4609	Other exciter problems

**Notes: 1) For use with Unit Codes 650-699.**

TABLE B07-68 Generator: Generator					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Generator	Generator		4500	Rotor windings (including damper windings and fan blades on hydro units)
Fluidized Bed	Generator	Generator		4510	Rotor collector rings
Fluidized Bed	Generator	Generator		4511	Rotor, General
Fluidized Bed	Generator	Generator		4512	Retaining Rings
Fluidized Bed	Generator	Generator		4520	Stator windings, bushings, and terminals
Fluidized Bed	Generator	Generator		4530	Stator core iron
Fluidized Bed	Generator	Generator		4535	Stator, General
Fluidized Bed	Generator	Generator		4536	Generator Heaters
Fluidized Bed	Generator	Generator		4540	Brushes and brush rigging
Fluidized Bed	Generator	Generator		4550	Generator bearings and lube oil system (including thrust bearings on hydro units)
Fluidized Bed	Generator	Generator		4551	Generator bearings
Fluidized Bed	Generator	Generator		4552	Generator lube oil system
Fluidized Bed	Generator	Generator		4555	Bearing cooling system
Fluidized Bed	Generator	Generator		4560	Generator vibration (excluding vibration due to failed bearing and other components)
Fluidized Bed	Generator	Generator		4570	Generator casing
Fluidized Bed	Generator	Generator		4580	Generator end bells and bolting
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

TABLE B07-69 Generator: Miscellaneous (Generator)					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Generator	Miscellaneous (Generator)		4800	Generator main leads
Fluidized Bed	Generator	Miscellaneous (Generator)		4805	Generator Bus Duct Cooling System
Fluidized Bed	Generator	Miscellaneous (Generator)		4810	Generator output breaker
Fluidized Bed	Generator	Miscellaneous (Generator)		4830	Major overhaul (720 hrs or longer) (use for non-specific overhaul only; see page B-CCGT-2)
Fluidized Bed	Generator	Miscellaneous (Generator)		4831	Minor generator overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Fluidized Bed	Generator	Miscellaneous (Generator)		4840	Inspection

Fluidized Bed	Generator	Miscellaneous (Generator)		4841	Generator dole testing
Fluidized Bed	Generator	Miscellaneous (Generator)		4842	Reactive and capability testing
Fluidized Bed	Generator	Miscellaneous (Generator)		4850	Core monitor alarm
Fluidized Bed	Generator	Miscellaneous (Generator)		4860	Generator neutral grounding equipment
Fluidized Bed	Generator	Miscellaneous (Generator)		4899	Other miscellaneous generator problems

**Notes: 1) For use with Unit Codes 650-699.**

## INACTIVE STATES

**TABLE B07-70 Inactive States: Inactive States**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Inactive States	Inactive States		2	Inactive Reserve Shutdown
Fluidized Bed	Inactive States	Inactive States		9990	Retired unit
Fluidized Bed	Inactive States	Inactive States		9991	Mothballed unit

**Notes: 1) For use with Unit Codes 650-699.**

## PERFORMANCE

**TABLE B07-71 Performance: Performance**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Performance	Performance		9997	NERC Reliability Standard Requirement
Fluidized Bed	Performance	Performance		9998	Black start testing
Fluidized Bed	Performance	Performance		9999	Total unit performance testing (use appropriate codes for individual component testing)

**Notes: 1) For use with Unit Codes 650-699.**

## PERSONNEL OR PROCEDURAL ERRORS

**TABLE B07-72 Personnel or Procedural Errors: Personnel or Procedural Errors**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9900	Operator error
Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9910	Maintenance personnel error
Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9920	Contractor error

Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9930	Operating procedure error
Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9940	Maintenance procedure error
Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9950	Contractor procedure error
Fluidized Bed	Personnel or Procedural Errors	Personnel or Procedural Errors		9960	Staff shortage

**Notes: 1) For use with Unit Codes 650-699.**

## 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. 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 B07-73 Pollution Control Equipment: CO Reduction**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	CO Reduction		8840	CO Active catalyst
Fluidized Bed	Pollution Control Equipment	CO Reduction		8841	CO Support materials
Fluidized Bed	Pollution Control Equipment	CO Reduction		8842	CO Plugging
Fluidized Bed	Pollution Control Equipment	CO Reduction		8845	Other CO reduction problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-74 Pollution Control Equipment: Continuous Emissions Monitoring Systems (CEMS)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8700	CEMS Certification and Recertification
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8710	SO2 analyzer problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8720	NOx analyzer problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8730	CO analyzer problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8740	CO2 analyzer problems

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8750	O2 analyzer problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8760	Opacity monitor problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8770	Flow monitor problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8780	Data acquisition system problems
Fluidized Bed	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8790	Miscellaneous CEMS problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-75 Pollution Control Equipment: Dry Scrubbers - Dry Scrubber**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8528	Dry scrubber instruments and controls
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8529	Gas dispersers
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8530	Spray towers
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8531	Spray machine/atomizer
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8532	Spray machine/atomizer motors
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8533	Spray machine/atomizer lubrication systems
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Dry Scrubber	8534	Spray machine/atomizer vibration problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-76 Pollution Control Equipment: Dry Scrubbers - Miscellaneous (Dry Scrubber)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8544	Mechanical failures
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8545	Electrical failures

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8546	Major overhaul
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8547	Inspection
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8548	Testing
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Miscellaneous (Dry Scrubber)	8549	Other dry scrubber problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-77 Pollution Control Equipment: Dry Scrubbers - Piping, Ducting, and Dampers**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8522	Piping
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8523	Valves
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8524	Strainers or filters
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8525	Ducting
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8526	Dampers
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Piping, Ducting, and Dampers	8527	Other piping, ducting, and damper problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-78 Pollution Control Equipment: Dry Scrubbers - Reagent\Slurry Supply**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8500	Slurry storage and feed tanks
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8501	Reagent storage, feed bins, and conveyors
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8502	Weigh feeders
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8503	Screw conveyors

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8504	Mills/slakers
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8505	Scalping screens
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8506	Slurry pipelines
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8507	Reagent uploading and transfer systems
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8508	Reagent unavailability
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8510	Slurry mixers and agitators
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8520	Slurry transfer pumps and motors
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Reagent\Slurry Supply	8521	Reagent/slurry problems

**Notes: 1) For use with Unit Codes 650-699.**

<b>TABLE B07-79 Pollution Control Equipment: Dry Scrubbers - Waste Disposal and Recovery</b>					
<b>UNIT TYPE</b>	<b>SYSTEM</b>	<b>COMPONENT</b>	<b>SUB-COMPONENT</b>	<b>CAUSE CODE</b>	<b>DESCRIPTION</b>
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8535	Fly ash conveyors
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8536	Bucket elevators
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8537	Weigh hoppers
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8538	Recycle storage and feed tanks including agitators
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8539	Recycle slurry transfer pumps
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8540	Waste disposal
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8541	Recycle feed bins
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8542	Recycle feed bins aeration systems
Fluidized Bed	Pollution Control Equipment	Dry Scrubbers	Waste Disposal and Recovery	8543	Powder coolers



**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-80 Pollution Control Equipment: Miscellaneous (Pollution Control Equipment)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8565	Electrostatic Precipitator rebuild/overhaul
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8600	Flue gas additives (furnace injection)
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8601	SO3 mitigation
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8620	Mercury Abatement Equipment
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8650	Baghouse systems, general
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8651	Bag failures and rebagging
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8652	Shakers and rappers
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8653	Inflation and deflation fans and motors
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8654	Baghouse booster fans and motors
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8655	Structural duct work and dampers
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8656	Controls and instrumentation
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8657	Ash handling system and hoppers
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8658	Slurry system from precipitators
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8670	Emission monitors (other than CEMS)
Fluidized Bed	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8699	Other miscellaneous pollution control equipment problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-81 Pollution Control Equipment: NOx Reduction Systems - Catalytic Air Heaters**

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8830	CAH NOx Active catalyst
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8831	CAH NOx Support materials
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8832	CAH NOx Plugging
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8835	Other CAH problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

<b>TABLE B07-82 Pollution Control Equipment: NOx Reduction Systems - Selective Catalytic Reduction Systems</b>					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8810	SCR NOx Reactor
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8811	SCR NOx Reagent
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8812	SCR NOx Catalyst
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8813	SCR NOx Injection grid piping/valves
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8814	SCR NOx Catalyst support material
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8815	SCR NOx Soot blowers
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8816	SCR NOx Plugging
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8817	SCR NOx Control system
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8820	SCR NOx Ammonia injection grid piping/valves
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8821	SCR NOx Ammonia tanks, piping and valves (not injection)
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8822	SCR NOx Ammonia air blowers
Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8823	SCR NOx Other ammonia system problems

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8825	Other SCR NOx problems
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**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-83 Pollution Control Equipment: NOx Reduction Systems - Selective Non-Catalytic Reduction Systems**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-84 Pollution Control Equipment: Precipitators**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-85 Pollution Control Equipment: Wet Scrubbers - Chemical Supply**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
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**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8000	Chemical feed storage, mill feeders, and conveyors
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8002	Screw conveyors
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8003	Bucket elevators
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8006	Weigh feeders
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8010	Crushers/mills
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8020	Mill slurry tanks supply problems
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8030	Classifiers
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8040	Slurry transfer pumps and motors
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8050	Chemical unavailability
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Chemical Supply	8099	Other chemical supply problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-86 Pollution Control Equipment: Wet Scrubbers - Miscellaneous (Wet Scrubber)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8400	Scrubber gas discharge reheaters - general
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8402	Scrubber gas discharge reheaters - vibration
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8404	Scrubber gas discharge reheaters - tube leaks
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8406	Scrubber gas discharge reheaters - ducts
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8410	Scrubber instruments and controls
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8415	Liquid level controls
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8420	Heat tracer

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8425	Miscellaneous mechanical failures
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8426	Miscellaneous electrical failures
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8430	Stack damage related to scrubber system
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8440	Major overhaul
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8450	Inspection
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8460	Testing
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8470	SO2 monitor
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Miscellaneous (Wet Scrubber)	8499	Other miscellaneous wet scrubber problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-87 Pollution Control Equipment: Wet Scrubbers - Piping, Ducting, Dampers, and Fans**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8200	Piping
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8210	Valves
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8220	Strainers or filters
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8225	Drain pots
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8230	Ducting
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8235	Demister
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8240	Bypass dampers
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8250	Dampers other than bypass
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8260	Scrubber booster I.D. fan (fan specific to the scrubber)

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8261	Scrubber booster I.D. fan drive
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8262	Scrubber booster I.D. fan vibration (fan specific to the scrubber)
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8264	Scrubber booster I.D. fan blades (fan specific to the scrubber)
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8270	Scrubber booster F.D. fan (fan specific to the scrubber)
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8271	Scrubber booster F.D. fan drive
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8272	Scrubber booster F.D. fan vibration (fan specific to the scrubber)
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8274	Scrubber booster F.D. fan blades (fan specific to the scrubber)
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8280	Reagent feed piping
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Piping, Ducting, Dampers, and Fans	8290	Demister wash piping assembly
Fluidized Bed	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 650-699.**

**TABLE B07-88 Pollution Control Equipment: Wet Scrubbers - Waste Disposal and Recovery**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8300	Waste disposal/recovery tanks
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8310	Waste disposal/recovery pumps
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8320	Waste disposal ponds
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8325	Ash disposal problems
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8330	Dewatering equipment (thickener, centrifuge, etc.)
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8335	Dryers
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8340	Centrifuge/vacuum filter

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8345	Calciners
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8349	Other waste disposal and recovery problems
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Waste Disposal and Recovery	8399	Solids conveying and mixing system problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-89 Pollution Control Equipment: Wet Scrubbers - Wet Scrubber**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8100	Scrubber/absorber tower or module
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8110	Spray nozzles
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8115	Disc scrubber throats
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8120	Spray pumps and motors
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8125	Scrubber recycle (liquid) pumps
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8127	Scrubber recycle (liquid) pump motors
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8130	Recirculation tanks including agitators
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8140	Reaction tanks including agitators
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8150	Tubes
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8160	Mist eliminators/demisters and washdown
Fluidized Bed	Pollution Control Equipment	Wet Scrubbers	Wet Scrubber	8199	Other scrubber problems

**Notes: 1) For use with Unit Codes 650-699.**

## 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 B07-90 Regulatory, Safety, Environmental: Other Operating Environmental Limitations					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9660	Thermal discharge limits - fossil and nuclear
Fluidized Bed	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9670	Noise limits (not for personnel safety) – fossil and nuclear
Fluidized Bed	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9677	Noise limits testing - fossil
Fluidized Bed	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9680	Fish kill - fossil and nuclear
Fluidized Bed	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9690	Other miscellaneous operational environmental limits - fossil and nuclear
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

TABLE B07-91 Regulatory, Safety, Environmental: Regulatory					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Regulatory, Safety, Environmental	Regulatory		9504	Regulatory (environmental) proceedings and hearings - regulatory agency initiated
Fluidized Bed	Regulatory, Safety, Environmental	Regulatory		9506	Regulatory (environmental) proceedings and hearings - intervenor initiated
Fluidized Bed	Regulatory, Safety, Environmental	Regulatory		9510	Plant modifications strictly for compliance with new or changed regulatory requirements (scrubbers, cooling towers, etc.)
Fluidized Bed	Regulatory, Safety, Environmental	Regulatory		9520	Oil spill in Gulf of Mexico (OMC)
Fluidized Bed	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)
<b>Notes: 1) For use with Unit Codes 650-699.</b>					



TABLE B07-92 Regulatory, Safety, Environmental: Safety					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Regulatory, Safety, Environmental	Safety		9700	OSHA-related retrofit or inspection
Fluidized Bed	Regulatory, Safety, Environmental	Safety		9720	Other safety problems
<b>Notes: 1) For use with Unit Codes 650-699.</b>					

TABLE B07-93 Regulatory, Safety, Environmental: Stack Emission					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Regulatory, Safety, Environmental	Stack Emission		9600	SO <sub>2</sub> stack emissions - fossil
Fluidized Bed	Regulatory, Safety, Environmental	Stack Emission		9610	NO <sub>x</sub> stack emissions - fossil
Fluidized Bed	Regulatory, Safety, Environmental	Stack Emission		9616	CO stack emissions - fossil
Fluidized Bed	Regulatory, Safety, Environmental	Stack Emission		9620	Particulate stack emissions - fossil
Fluidized Bed	Regulatory, Safety, Environmental	Stack Emission		9630	Opacity - fossil
Fluidized Bed	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)
Fluidized Bed	Regulatory, Safety, Environmental	Stack Emission		9656	Other stack or exhaust emissions testing - fossil
<b>Notes: 1) For use with Unit Codes 650-699. 2) Include exhaust emissions.</b>					

## 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 B07-94 Steam Turbine: Controls					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Steam Turbine	Controls		4290	Hydraulic system pumps
Fluidized Bed	Steam Turbine	Controls		4291	Hydraulic system coolers
Fluidized Bed	Steam Turbine	Controls		4292	Hydraulic system filters
Fluidized Bed	Steam Turbine	Controls		4293	Hydraulic system pipes and valves
Fluidized Bed	Steam Turbine	Controls		4299	Other hydraulic system problems
Fluidized Bed	Steam Turbine	Controls		4300	Turbine supervisory system (use codes 4290 to 4299 for hydraulic oil)
Fluidized Bed	Steam Turbine	Controls		4301	Turbine governing system
Fluidized Bed	Steam Turbine	Controls		4302	Turbine trip devices (including instruments)
Fluidized Bed	Steam Turbine	Controls		4303	Exhaust hood and spray controls
Fluidized Bed	Steam Turbine	Controls		4304	Automatic turbine control systems - mechanical
Fluidized Bed	Steam Turbine	Controls		4305	Automatic turbine control systems - mechanical - hydraulic
Fluidized Bed	Steam Turbine	Controls		4306	Automatic turbine control systems - electro- hydraulic - analog
Fluidized Bed	Steam Turbine	Controls		4307	Automatic turbine control systems - electro- hydraulic - digital
Fluidized Bed	Steam Turbine	Controls		4308	Automatic turbine control systems - digital control and monitoring
Fluidized Bed	Steam Turbine	Controls		4309	Other turbine instrument and control problems
Fluidized Bed	Steam Turbine	Controls		4310	Steam Turbine Control System - data highway
Fluidized Bed	Steam Turbine	Controls		4311	Steam Turbine Control System - hardware problems (including card failure)
Fluidized Bed	Steam Turbine	Controls		4312	Steam Turbine Control System - internal and termination wiring
Fluidized Bed	Steam Turbine	Controls		4313	Steam Turbine Control System - logic problems
Fluidized Bed	Steam Turbine	Controls		4314	Steam Turbine Control System - upgrades

**Notes: 1) For use with Unit Codes 650-699.**

TABLE B07-95 Steam Turbine: High Pressure Turbine					
UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Steam Turbine	High Pressure Turbine		4000	Outer casing

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Steam Turbine	High Pressure Turbine		4001	Inner casing
Fluidized Bed	Steam Turbine	High Pressure Turbine		4009	Nozzle bolting
Fluidized Bed	Steam Turbine	High Pressure Turbine		4010	Nozzles and nozzle blocks
Fluidized Bed	Steam Turbine	High Pressure Turbine		4011	Diaphragms
Fluidized Bed	Steam Turbine	High Pressure Turbine		4012	Buckets or blades
Fluidized Bed	Steam Turbine	High Pressure Turbine		4013	Diaphragms unit and shroud type
Fluidized Bed	Steam Turbine	High Pressure Turbine		4014	Bucket or blade fouling
Fluidized Bed	Steam Turbine	High Pressure Turbine		4015	Wheels or spindles
Fluidized Bed	Steam Turbine	High Pressure Turbine		4020	Shaft seals
Fluidized Bed	Steam Turbine	High Pressure Turbine		4021	Dummy rings
Fluidized Bed	Steam Turbine	High Pressure Turbine		4022	Gland rings
Fluidized Bed	Steam Turbine	High Pressure Turbine		4030	Rotor shaft
Fluidized Bed	Steam Turbine	High Pressure Turbine		4040	Bearings
Fluidized Bed	Steam Turbine	High Pressure Turbine		4041	Thrust bearings
Fluidized Bed	Steam Turbine	High Pressure Turbine		4099	Other high pressure turbine problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-96 Steam Turbine: Intermediate Pressure Turbine**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-97 Steam Turbine: Low Pressure Turbine**

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4200	Outer casing
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4201	Inner casing
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4209	Nozzle bolting
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4210	Nozzles and nozzle blocks
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4211	Diaphragms
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4212	Buckets or blades
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4213	Bucket or blade fouling
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4215	Wheels or spindles
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4220	Shaft seals
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4221	Dummy rings
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4222	Gland rings
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4230	Rotor shaft
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4240	Bearings
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4241	Thrust bearings
Fluidized Bed	Steam Turbine	Low Pressure Turbine		4250	Other low pressure turbine problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-98 Steam Turbine: Lube Oil**

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

**Notes: 1) For use with Unit Codes 650-699. 2) Do not include bearing failures due to lube oil.**

**TABLE B07-99 Steam Turbine: Miscellaneous (Steam Turbine)**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4400	Major turbine overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4401	Inspection

**Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes**

Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4402	Minor turbine overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4410	Turning gear and motor
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4411	Steam turbine gear box (single shaft configuration)
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4412	Steam turbine clutch (single shaft configuration)
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4415	Shaft coupling mechanism
Fluidized Bed	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)
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4430	Gland seal system
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4450	Water induction
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4460	Turbine overspeed trip test
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4470	Differential expansion
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4490	Turbine performance testing (use code 9999 for total unit performance testing)
Fluidized Bed	Steam Turbine	Miscellaneous (Steam Turbine)		4499	Other miscellaneous steam turbine problems

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-100 Steam Turbine: Piping**

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

**Notes: 1) For use with Unit Codes 650-699.**

**TABLE B07-101 Steam Turbine: Valves**

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Fluidized Bed	Steam Turbine	Valves		4260	Main stop valves
Fluidized Bed	Steam Turbine	Valves		4261	Control valves
Fluidized Bed	Steam Turbine	Valves		4262	Intercept valves
Fluidized Bed	Steam Turbine	Valves		4263	Reheat stop valves
Fluidized Bed	Steam Turbine	Valves		4264	Combined intercept valves
Fluidized Bed	Steam Turbine	Valves		4265	Miscellaneous drain and vent valves

Appendix B07: Index To Fluidized Bed Combustion Unit Cause Codes

Fluidized Bed	Steam Turbine	Valves		4266	Main stop valve testing
Fluidized Bed	Steam Turbine	Valves		4267	Control valve testing
Fluidized Bed	Steam Turbine	Valves		4268	Reheat/intercept valve testing
Fluidized Bed	Steam Turbine	Valves		4269	Other turbine valves (including LP steam admission valves)
<b>Notes: 1) For use with Unit Codes 650-699.</b>					