KUSILE POWER STATION

PROGRAMME, PROGRESS REPORTING & MEETING REQUIREMENTS

Part 3
Annexure X.2
Rev 4_0121

1. Programming

1.1 General programme requirements

Programmes are in Primavera P6 format and are submitted in electronic format (XER) together with one printed copy.

Unless otherwise directed in writing by the *Project Manager*, the level of detail required is level 4 and programmes:

1.1.1 include work break-down structure (WBS) (which WBS are consistent with the coding structure provided by the *Project Manager* from time to time);

1.1.2 show resourced material and manpower quantities and units per activity;

1.1.3 show activity durations in days;

1.1.4 show late and early start dates, late and early finish dates and total float;

1.1.5 provide at least one predecessor and one successor relationship for each activity in the programme, save the start and finish milestones (as such, there are no open logic ties for all the Works activities);

1.1.6 not utilise any negative lags in predecessor-successor relationships;

1.1.7 not utilise any constraints that disrupt the programme software's date calculations, such as Start On, Finish On, Mandatory Start, or Mandatory Finish constraints;

1.1.8 in the event of out-of-sequence progress are reported, repair the logic ties for the activities affected by the out-of-sequence progress so that the programme models indicate the revised flow of work;

1.1.9 include activity codes (which activity codes are consistent with those provided by the *Project Manager* from time to time);

1.1.10 clearly identify and indicate milestones, key events and the critical

path; and

1.1.11 incorporate other requirements or information required by the *Project Manager* from time to time.

Activities exceeding thirty days in duration are broken down into detailed sub-tasks. Commissioning activities are scaled in days. Where the *Project Manager* approves use of a twenty-four hour schedule, then the resource loaded programme is detailed in hours. Procurement, construction and commissioning activities are fully detailed to show all terminal point release (interface) requirements including civil, mechanical, C&I, electrical and services.

1.2 First Programme

The first programme is consistent with the programme submitted with the Tender but includes any alterations or additions negotiated and agreed to between the Parties at the Contract Date.

The *Contractor* submits a preliminary first programme within 14 days of the Contract Date. This preliminary programme complies with the requirements of the first programme and with the requirements set out in clause 1.1 above, except that the level of detail required therein is that of level 2 and not level 4.

1.3 Cash Flow

Together with the first programme, the *Contractor* submits a cash flow directly related to this programme detailing the estimated financial monthly expenditure over the entire Contract period based on appropriate quantitative information.

The level of detail of this cash flow is at least equal to the level of detail provided in the Schedule of Payments.

The *Contractor* submits a revised cash flow to the *Project Manager*, together with a detailed variance analysis:

1.3.1 whenever the *Contractor* is required to submit a revised programme under the Contract (but only if and to the extent that the previously submitted cash flow is inconsistent with the revised programme); or

1.3.2 when there is any deviation to the previously submitted cash flow.

Each cash flow is provided to the *Project Manager* in Microsoft Excel © (*.xls) and one printed copy.

1.4 Monthly Progress Programme

The *Contractor* submits a Monthly Progress Programme ("MPP") in electronic XER format to the *Project Manager* by the Friday immediately following the "data date" to which the report relates. The "data date" is the 3rd (third) Saturday of the month to which the MPP relates. The MPP reports the *Contractor*'s actual progress achieved through the data date during the month for each programme activity. The *Contractor* compares the actual progress for each activity against the planned date from the programme to determine actual execution relative to planned execution.

1.5 Commissioning Plan and Sub-Programme

The *Contractor* prepares and submits to the *Project Manager* for his approval a detailed commissioning plan and sub-programme, which:

1.5.1 complies with the *Employer*'s Requirements and other applicable requirements of the Contract (the *Contractor* acknowledging that his commissioning plan and sub-programme needs to be integrated by the *Project Manager* into a detailed commissioning plan and programme for the related Project Works, which include the works of Other Project Contractors);

1.5.2 is amended and re-submitted at the expense of the *Contractor* until approved by the *Project Manager*; and

1.5.3 is amended, updated and re-submitted for the approval of the *Project Manager* as necessary and when required by the *Project Manager*.

Compliance with the commissioning plan and sub-programme does not relieve the *Contractor* of any responsibility, undertaking warranty or other obligation under the Contract.

Unless the *Project Manager* directs otherwise, the detailed commissioning plan and sub- programme are submitted at least six months prior to the scheduled start date of commissioning and a preliminary commissioning plan and sub- programme are submitted within 56 days after Commencement Date.

1.6 Vendor Document Submittal Schedule

The *Contractor* submits to the *Project Manager*, for his approval and within the Stated Time, a vendor document submittal schedule ("VDSS") which contains a full list of the *Contractor*'s Documents and their corresponding submission dates. The VDSS are consistent with the programme (and with the VDSS submitted with the Tender, if any, including any alterations or additions negotiated and agreed to between the Parties as at Contract Date).

Whenever the *Contractor* is required to submit a revised programme under the Contract, he, to the extent that the VDSS is inconsistent with the revised programme, also submit a revised VDSS for the *Project Manager*'s approval.

Unless the *Project Manager*, within 21 days after receiving the VDSS, gives notice to the *Contractor* stating the extent to which the VDSS does not comply with the Contract, the *Contractor* proceeds in accordance with the VDSS, subject to his other obligations under the Contract. The *Employer*'s Personnel are entitled to rely upon the VDSS when planning their activities.

If, at any time, the *Project Manager* gives notice to the *Contractor* that the VDSS fails (to the extent stated) to comply with the *Contractor* or to be consistent with actual progress and the *Contractor*'s stated intentions, the *Contractor* submits a revised VDSS to the *Project Manager* for his approval.

2. Monthly Progress Reports

The *Contractor* submits monthly progress reports to the *Project Manager*. The reports are submitted in writing in a form approved by the *Project Manager*. An electronic copy and two hard copies of each progress report are submitted to the *Project Manager*.

Each report covers a period of a calendar month save that the first report covers the period up to the end of the first calendar month following the Commencement Date. The "data date" is the 3rd (third) Saturday of the month to which the report relates.

Reports are submitted by the 4th (fourth) day of the month following the month to which the report relates.

Each report includes:

2.1 an executive summary that provides a narrative summary of matters referred to in 2.2 to 2.23 below;

2.2 charts and detailed descriptions of the status of the Works in narrative format, including each stage of design, *Contractor*'s Documents, procurement, manufacture, delivery to the Project Site (or at other places, if any, as may be specified under the Contract as forming part of the Site), construction, erection, commissioning and testing;

2.3 for the manufacture of each main item of Plant, the name of the manufacturer, manufacturers location, percentage progress and the actual or expected dates of commencement of manufacture, inspections, pre-delivery tests and delivery to the Project Site (and/or at other places, if any, as may be specified under the Contract as forming part of the Site);

2.4 comparisons of actual and planned progress from the programme, detailing activities completed, the percentage progress of each activity in progress, completed and not completed and activities not started (depicted in a 2-bar bar chart format with an upper bar displaying the current status and a lower bar displaying planned status for each activity);

2.5 a critical path analysis completely detailing all negative total float paths together with a written description of the issue and root cause and the detailed recovery plan(s);

2.6 colour photographs in digital format showing progress in the course of manufacture and on the Site, with each set comprising at least 20 colour photographs, individually marked with the date taken, a description of the subject and the direction of view;

2.7 S-curves (developed by the *Contractor* in accordance with the guidelines issued by the *Project Manager* from time to time, including but not limited to the Partial Credit Guidelines and the basis for the curves) that show both planned and earned progress for the overall Works, overall engineering, engineering by unit, overall procurement, procurement by unit, overall construction, construction by unit, overall commissioning, and commissioning by unit, with each curve based on information from the programme (with construction progress reported in accordance with the progress reported in the FPMS as provided for in 5 below);

2.8 up-to-date cash flow (c.f. paragraph 1.3 above), in Microsoft Excel © (*.xls) and one printed copy;

2.9 details of actual and planned resources including number of each class of *Contractor*'s Personnel and of each type of the *Contractor*'s Equipment at the Project Site (and/or at other places, if any, as may be specified under the Contract as forming part of the Site) for the relevant period;

2.10 a report on quality demonstrating compliance with the quality assurance requirements of the Contract, including a schedule identifying all quality control documents, test results and certificates issued, during the reporting period;

2.11 a list of proposed Variations and the status thereof;

2.12 a list of all Variations detailing their reference numbers;

2.13 a list of site instructions and other instructions received by the *Contractor* (other than Variations provided for in 2.12) listing the date of receipt and the nature of the instruction;

2.14 a list of all notified claims for extensions of time or compensation detailing

their reference numbers, the date on which the underlying cause, circumstance or event arose and when it first came to attention of the *Contractor*, the claimed additional Cost (and reasonable profit where applicable under the Contract) and/or extension to the Time for Completion, the dates on which notice and the details thereof were given to the *Project Manager* under (NEC) Core Clause 60 [*Compensation events*] of the Conditions of Contract and the status thereof, *Engineer* under (FIDIC) Sub-Clause 20 [*Claims, Disputes and Arbitration*].

2.15 a risk register and assessment dealing with all areas of concern including details of all notified early warnings and details of other events and circumstances not dealt with above, which has an adverse cost impact and/or cause delays and details of the corrective or other measures being adopted, or adopted to mitigate or overcome such cost impact and/or delay;

2.16 a current register of drawings and other documents submitted to the *Project Manager* during the reporting period and the prior reporting period, detailing the date of issue to the *Project Manager* and, if applicable, the date by which the *Project Manager*'s approval is required;

2.17 a current list of all drawings and documents issued to the *Contractor* (including the applicable revision) detailing the date of issue and transmittal thereof;

2.18 a report on health & safety and environmental matters demonstrating compliance with the health & safety and environmental requirements of the Contract;

2.19 a report on industrial relations relevant to the Works including industrial relations at the Project Site (and at other places, if any, as may be specified under the Contract as forming part of the Site) and at places of manufacture;

2.20 status report on payments made and outstanding applications for payment;

2.21 a status report on progress towards compliance and actual compliance with the *Contractor*s Accelerated and Shared Growth Initiative - South Africa (ASGI-SA) and, if applicable, Competitive Supplier Development Programme (CSDP) obligations under the Contract;

2.22 a copy of the *Contractor*'s daily diary (c.f. 6 below) for the period in question; and such other matters and information (including schedules and charts) as the *Project Manager* may require is included in the Progress Report from time to time.

3. 3-Week Daily Work Look-Ahead Plan

In addition to the programme, the *Contractor* develops weekly a 3-week daily work look-ahead plan ("3WLAP") each week. The 3WLAP is submitted to the *Project Manager* by the close of business each Friday or as otherwise directed by the *Project Manager*.

The 3WLAP is a bar chart containing activities and durations and is otherwise in a form approved by the *Project Manager*. A cross reference to the Programme activities and corresponding completion dates necessary for the *Contractor* to meet the Time for Completion is clearly indicated on the 3WLAP.

The level of detail required for the 3WLAP is determined by the *Project Manager* based on the current status and complexity of the Works and the coordination required with the Project Works. Unless otherwise directed by the *Project Manager* the 3WLAP:

3.1 indicates all planned work that is accomplished during the next current week and the two week period thereafter, all in support of, and in accordance with, the Programme.

3.2 includes specific man-power requirements by class by day;

3.3 includes *Contractor*'s Equipment requirements by day;

3.4 highlights any material or drawing needed from the *Employer* or *Project Manager*;

3.5 reflects the planned and actual activities progress of the previous week;

3.6 includes any activities that are required to be accomplished by Other Project Contractors that would impact and/or prevent *Contractor* from starting and/or accomplishing its planned work; and

3.7 is presented in the level of detail sufficient for *Contractor* to direct the efforts of the *Contractor*'s Personnel on a day-to-day basis.

4. Additional Weekly and Daily Reports

Following mobilisation at the Project Site (or at other places, if any, as may be specified under the Contract as forming part of the Site), the *Contractor*'s Site office, in addition, submits to the *Project Manager* (in electronic copy and two hard copies):

4.1 weekly reports, in the form prescribed by the *Project Manager*, which summarises activities at the Project Site (and at other places, if any, as may be specified under the Contract as forming part of the Site), indicating quantities installed for each work breakdown structure activity (in the form of the Field Progress Measurement System ("FPMS") provided for in 5

below), the numbers of each class of *Contractor*'s Personnel and of each type of the *Contractor*'s Equipment thereon, the Plant and Materials thereon and record any areas of concern and details of corrective action being taken; and

4.2 daily activity reports, in the form prescribed by the *Project Manager*, summarizing the main activities undertaken each day, noting any special activities that require witnessing, together with full particulars and details of obstructions, modified or additional work, incidents, health and safety matters and the numbers of each class of *Contractor*'s Personnel and of each type of the *Contractor*'s Equipment engaged in each of the several portions of the work in progress.

5. Field Progress Measurement System (FPMS) Reporting and Quantity Reporting

5.1 Field Progress Measurement System (FPMS) Reporting

5.1.1 The Field Progress Measurement System (FPMS) is used by the *Contractor* as a means to measure and report the *Contractor*'s progress of the physical Works, and to document and report the progress on a weekly basis, for comparison against the planned progress, and other purposes determined by the *Project Manager*. Each item included in the FPMS has an "as contracted" quantity, and associated man-hour basis (or other rate as prescribed by the *Project Manager*). The quantity and man-hour data provided are used to establish the overall percent completion of the Works.

5.1.2 FPMS is a quantity-based earned value system. The quantities and man- hours are updated and reported weekly by the *Contractor*. The breakdown are of sufficient detail to allow installed quantities (i.e., cubic meters, linear meters, number of items, etc.) of work (i.e. concrete, pipe, raceway, cable, instruments, etc.) and can be physically verifiable. Each item included in the FPMS has a cross-reference to the programme WBS activity.

5.1.3 Progress, as a measurement of percent complete, are reported through a method of "earning" installed quantities along with their relative share of the current man-hour estimate (*Contractor*'s current budget) by use of “partial credit guidelines” prescribed by the *Project Manager*. The *Contractor*'s current budget consists of the original contracted man- hour quantities, plus Variations (and other related adjustments under the Contract). Overall percent (%) complete of the *Contractor*'s completed Work is calculated by taking the sum of earned man-hours for all of the FPMS line items divided by the total current budget of man-hours included in the FPMS.

5.1.4 The FPMS satisfies the *Project Manager*'s various reporting

requirements through the use of the coding Levels (Level 1, Level 2, Level 3, and Level 4), and through the use of WBS and cost codes prescribed by the *Project Manager* as detailed in Part 2.1 [*Cost Code Manual*].

5.1.5 The tool for maintaining and reporting the FPMS is Microsoft Excel © (*.xls) format unless otherwise specified by the *Project Manager*.

5.1.6 Unless the *Project Manager* directs otherwise, the initial submittal of the FPMS by the *Contractor* is submitted for the *Project Manager*'s review and approval at least 84 days prior to the commencement date construction

6. Daily Diary

The *Contractor* maintains an up to date daily diary of all Works related activities at the Project Site (and at other places, if any, as may be specified under the Contract as forming part of the Site). The daily diary is available for inspection and reproduction by the *Project Manager* at all times.

7. Reports on Disputed Work

For work in respect of which the entitlement of the *Contractor* is disputed or of an uncertain nature, the *Project Manager* may require the *Contractor* to submit work detail sheets, for the approval of the *Project Manager*, as a record of work done. The sheets are "For record purposes only" and does not give rise to or evidence any entitlement to an extension to the Time for Completion or any additional compensation.

8. Additional Reports

The *Project Manager* is entitled to request, and the *Contractor* is required to provide, additional reports to monitor the progress of the Works and for other purposes determined by the *Project Manager*.

9. Meetings

During the execution of the Works, various weekly and monthly meetings are held.

Inter alia, these meetings are to discuss and review in detail the up-to-date progress of the Works. Without limiting the nature of the matters to be discussed at these meetings, if the actual progress of the Works is at any time unsatisfactory, the *Project Manager* is entitled to call on the *Contractor* to advise the reasons for the foregoing and to make proposals for corrective action to be taken.

The *Project Manager* is entitled to call meetings required by the applicable Law or

otherwise required by the *Project Manager* in connection with the Project Works.

Meetings are conducted at the Project Site or at another location directed by the *Project Manager*.

The agenda for meetings is determined by the *Project Manager*. The *Contractor* is entitled to propose matters for inclusion on the agenda of any meeting which he is required to attend. The minutes are kept by the *Project Manager* and submitted to the *Contractor* for comment prior to the subsequent meeting and such minutes are thereafter formally approved at such subsequent meeting as an accurate record of the issues discussed at the previous meeting. Such minutes does not necessarily be a verbatim transcript of the discussions at meetings.

Unless otherwise approved by the *Project Manager*, meetings where the *Project Manager* requires the *Contractor* to be present, whether scheduled or otherwise called by the *Project Manager*, are attended by the *Contractor*'s Representative.

Without limiting the above, the *Contractor* is required to attend weekly meetings to review progress and update the Works completion plans. The *Contractor*'s Representative is required to present the following at these weekly progress meetings:

9.1 current status of Works progress;

9.2 detailed three week look-ahead programme;

9.3 current and projected manpower by class;

9.4 health, safety and quality control issues; and

9.5 problem areas or concerns.

10. Photographs for Progress Reporting Requirements

The taking of photographs of the Kusile Power Station including the Project Works is restricted and subject to the approval of the *Project Manager* as provided for under the Contract.

For the purpose of the Progress Reporting Requirements, the *Project Manager* is entitled, at any time, to prohibit the taking of such photographs and/or to require that all such photographs be taken only by an official *Employer* appointed photographer. In the latter event, the *Contractor* is required to make arrangements directly with this photographer for the taking of the photographs required by the *Contractor* for the purpose of the Progress Reporting Requirements and for the payment thereof.

KUSILE POWER STATION

EMPLOYER'S HEALTH, SAFETY & ENVIRONMENTAL REQUIREMENTS

SCHEDULE

Part 3
Annexure X.2.1
Rev 4_0121

No.	Document Description.	No of Pages
1.	**Cost Code Manual**	**38**

COST CODE MANUAL

Issued as per Part 2 (FY), Subparagraphs 5.1.4 and 5.2.3 of the Part 3 – Employer Policies and Procedures.

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	L2 - SUBDIVISION	L2 UM	L	L3 - CATEGORY	L3 UM	L	L4 - ITEM	L4 UM	L5	L5 - DESCRIPTION	L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
02	Hazardous Material Abatement	LS									
			0	Asbestos Removal	m3						
			1	Aboveground Structures	m3						
			1	Underground Structures	m3						
			2	Contaminated Soils	m3						
			2	Contaminated Water	m3						
			3	Remediation	m3						
			3	Encapsulation	m2						
			4	HazMat Disposal	m3						
			4	OSHA Testing	LS						
			9	User Defined							
04	Demolition	LS									
06	Repair/Modify/Retrofit/Relocate (Scope, not Rework)	LS									
			0	Site Paving	m3						
						1	Asphalt	m3			
						2	Concrete	m3			
						3	Gravel/Rock	m3			
						9	User Defined				
			1	Concrete	m3						
						1	Slabs/Paving	m3			
						2	Walls	m3			
						3	Equipment Foundations	m3			
						3	Piles	EA			
						9	User Defined				
			1	Buildings	m3						
						1	Steel	TN			
						2	Concrete	m3			
						3	Brick or Block	m3			
						9	User Defined				
			2	Structural/Steel	TN						
						1	Columns	TN			
						2	Beams	TN			
						3	Decking	TN			
						3	Piles	EA			
						4	Supports	TN			
						5	Platforms	TN			
						6	Handrail	TN			
						7	Wall Panels	TN			
						8	Ductwork	TN			
						9	User Defined				
			2	Piping	m						
						1	Rack Piping	m			
						2	Off Rack Piping	m			
						3	Underground Piping	m			
						4	Valves	EA			
						5	Specialty Items	EA			
						9	User Defined				
			3	Mechanical Equipment	EA						
						0	Vessels	EA			
						0	Shop Fabricated Tanks	EA			
						0	Field Fabricated Tanks	EA			
						0	CTG	EA			

0	STG - Axial Exhaust	EA
1	STG - Two Flow Down Exhaust	EA
1	STG - Two Flow Side Exhaust	EA
1	HRSG - Horizontal	EA
1	HRSG - Vertical	EA
1	Fuel Oil Fired Boiler	EA
1	Pulverized Coal Boiler	EA
1	Circulating Fluidized Bed Boiler	EA
2	Compressors and Generators	EA
2	Fired Heat Exchangers and Boilers - Vendor Furnis	EA
2	Fired Heat Exchangers and Boilers - Field Fabricat	EA

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	L2 - SUBDIVISION	L2 UM	L3	L3 - CATEGORY	L3 UM	L4	L4 - ITEM	L4 UM	L5	L5 - DESCRIPTION	L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
						24	Stacks and Chimneys	EA			
						26	Exchangers and Cooling Towers	EA			
						28	Pumps and Drivers	EA			
						30	Fans and Exhaust Systems	EA			
						32	Duct and Breeching - Non-HVAC, Non-Vendor Furn	EA			
						33	Chemical Equipment, Systems, and Skids	EA			
						34	Material Processing Equipment and Skids	EA			
						36	Material Handling and Other Equipment	EA			
						38	Fire and Safety Equipment	EA			
						40	Plant Operations and Support Equipment	EA			
						90	User Defined				
			35	Electrical	m						
						04	Conductors, Cable, and Wiring	m			
						10	Cable Tray	m			
						30	Equipment	EA			
						90	User Defined				
			40	Instrumentation	EA						
						02	Instruments	EA			
						50	Tubing	m			
						84	Control Valves	EA			
						90	User Defined				
			45	Insulation	m2						
						10	Building	m2			
						20	Equipment	m2			
						30	Piping	m			
						90	User Defined				
			70	Hauling Demo/Repair/Modify/Retrofit/Relocate Trash	m3						
			90	User Defined							
08	General Earthwork/Site Work	m2									
			05	Site Clearing and Grubbing – Heavy	m2						
						10	Large Tract Tree Clearing and Disposal	m2			
						20	Razing	m2			
						90	User Defined				
			10	Site Clearing	m2						
						10	Small Tree and Shrub Removal and Disposal	m2			
						20	Small Tree and Shrub Removal and Disposal –Sele	EA			
						30	Sod Stripping	m2			
						40	Topsoil Removal and Stockpile	m3			
						50	Topsoil Placement	m3			
						60	Topsoil Disposal Offsite	m3			
						90	User Defined				
			15	Site Grading	m2						
						10	Rough Grading	m2			
									10	Area	m2
									20	Embankment	m2
									30	Roadway	m2
									90	User Defined	
						20	Finish Grading	m2			
									10	Area	m2
									20	Embankment	m2
									30	Roadway	m2
									90	User Defined	
						90	User Defined				
			20	Right of Way	m2						
			21	Right of Way Restoration	m2						
						10	Transmission Lines	m2			
						20	Pipelines	m2			
						30	Roads	m2			
						90	User Defined				
			25	Soil Compaction, Stabilization/Treatment	m2						
						10	Roller Compaction	m2			
						20	Vibro Flotation	m2			
						30	Soil Stabilization/Treatment	m2			
									10	Asphalt	m2

L2	LEVEL 2 L2 - SUBDIVISION	L2 UM	L3	LEVEL 3 L3 - CATEGORY	L3 UM	L4	LEVEL 4 L4 - ITEM	L4 UM	L5	LEVEL 5 L5 - DESCRIPTION	L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
									20	Fly Ash/Soil Cement	m3
									30	Lime	m3
									40	Lime Slurry	m3
									50	Geo-textile	m2
									60	Pressure Grouting	m3
									90	User Defined	
						9	User Defined				
			30	Site/Area Restoration	m2						
			70	Hauling Debris/Spoil	m3						
			90	User Defined							
10	Excavation/Trenching	m3									
			0	Mass Cut/Excavation	m3						
						1	Mass Cut	m3			
						2	Removal of spoils and Haul to Storage	m3			
						3	Disposal	m3			
						9	User Defined				
			0	Structural Excavation (Foundations)	m3						
			0	Trenches/Ditches	m3						
						0	Spillway/Ditch/Swale	m3			
						1	Piping	m3			
						2	Electrical	m3			
						6	Utility	m3			
						9	User Defined				
			4	Rock – Blast	m3						
			4	Rock – Rip	m3						
			7	Haul Dirt & Rock	m3						
			9	User Defined							
12	Backfill	m3									
			01	Mass Backfill	m3						
			04	Structural Backfill (Foundations)	m3						
			0	Trenches	m3						
						0	Spillway/Ditch/Swale	m3			
						1	Piping	m3			
						2	Electrical	m3			
						6	Utility	m3			
						9	User Defined				
			7	Haul Dirt & Rock	m3						
			7	Import Fill Material	m3						
						1	Sand	m3			
						2	Aggregate/Rock	m3			
						3	Dirt, Soil, Topsoil	m3			
						9	User Defined				
			78	Crushing (Onsite) Rock	m3						
			90	User Defined							
14	Tunneling, Boring, Casing	m									
			1	Jacking	m						
			2	Tunneling	m						
			3	Casing							
						1	Ventilation and Compression	LS			
						2	Excavation	m3			
						3	Lining	m2			
						4	Grouting	m3			
						5	Hydro Boring	m			
						9	User Defined				
			9	User Defined							
16	Shoring and Underpinning	m2									
			1	Shoring – Soils/Trenches	m2						
			2	Shoring – Structures	m2						
			3	Shoring – Tunnels	m2						
			4	Underpinning							
			9	User Defined							
18	Slope Protection and Erosion Control	m2									
			0	Retaining Walls							

LEVEL 2 L2	LEVEL 2 L2 - SUBDIVISION	LEVEL 2 L2 UM	LEVEL 3 L3	LEVEL 3 L3 - CATEGORY	LEVEL 3 L3 UM	LEVEL 4 L4	LEVEL 4 L4 - ITEM	LEVEL 4 L4 UM	LEVEL 5 L5	LEVEL 5 L5 - DESCRIPTION	LEVEL 5 L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
			1	Slope Paving	m2						
						10	Concrete	m3			
									0	Mud Matt/Seal Slabs	m3
									1	Formwork	m2
									1	Falsework	m2
									2	Reinforcing Steel	TN
									3	Embeds	kg
									3	Anchor Bolts (Embedded Only)	EA
									4	Concrete Placement	m3
									5	Strip/Clean/Rub	m2
						50	Shotcrete/Gunnite	m2			
						55	Grout	m3			
						90	User Defined				
			1	Rip Rap	m2						
			2	Stone Slope Protection	m3						
			2	Silt Fences	m2						
			3	Wire Mats	m2						
			3	Sediment Control	m2						
			4	Membrane Systems	m2						
			4	Gabions	m2						
			5	Geo-Textile Fabric	m2						
			9	User Defined							
20	Piles and Caissons	EA									
			1	Drilled or Auger, Cast-in-Place Piles	EA						
			2	Bell Caissons	EA						
			3	Precast Driven Piles	EA						
			4	Steel Piles	EA						
						02	Pipe Rack / Conveyors	EA			
						06	Tanks/Vessels	EA			
						08	CTG	EA			
						10	STG	EA			
						12	Boiler (HRSG, PC, CFB, etc)	EA			
						16	Transformers	EA			
						20	Generators	EA			
						22	Auxiliary Boiler	EA			
						24	Stack	EA			
						25	Silencer	EA			
						26	Cooling Tower	EA			
						28	Pumps	EA			
						30	Buildings	EA			
						31	Sumps, Containment, Wells	EA			
						34	SCR	EA			
						90	User Defined				
			5	Sheet Piling	m2						
			7	Post-Tension Anchors	EA						
			8	Repair Piles	EA						
			9	User Defined							
22	Roadwork, Paving, and Surfacing (bu	m2									
			1	Asphalt Surfacing	m2						
			2	Gravel Surfacing	m2						
						2	Sand Surfacing	m2			
						3	Dirt Roads	m2			
						5	Sub-grade Prep	m2			
						6	Base Course	m2			
						Add back the deleted ones					
						21	Soil Cement Paving	m2			
						25	Unit Pavers	m2			
						90	User Defined				
									0	2" thick	m2
									0	3" thick	m2
									0	4" thick	m2
									0	5" thick	m2
									0	6" thick	m2

L2	LEVEL 2 L2 - SUBDIVISION	L2 UM	L3	LEVEL 3 L3 - CATEGORY	L3 UM	L4	LEVEL 4 L4 - ITEM	L4 UM	L5	LEVEL 5 L5 - DESCRIPTION	L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
									7	7" thick	m2
									8	8" thick	m2
									9	9" thick	m2
									10	10" thick	m2
									12	12" thick	m2
									14	14" thick	m2
									16	16" thick	m2
									18	18" thick	m2
									20	20" thick	m2
									22	22" thick	m2
									24	24" thick	m2
									90	User Defined	
			90	User Defined							
24	Wells	m									
			05	Water	m						
			10	Wastewater/Injection Well	m						
			20	Test Wells	m						
			30	Observation Well	m						
			40	Drilling and Casing	m						
			90	User Defined							
26	Ponds/Containment Areas	m3									
			10	Ponds	m3						
			20	Earthen Containment Areas/Dikes	m3						
			40	Liners	m2						
						05	Clay	m3			
						10	Concrete	m3			
									05	Mud Matt/Seal Slabs	m3
									10	Formwork	m2
									15	Falsework	m2
									20	Reinforcing Steel	TN
									30	Embeds	kg
									35	Anchor Bolts (Embedded Only)	EA
									40	Concrete Placement	m3
									50	Strip/Clean/Rub	m2
						15	Fabric	m2			
						90	User Defined				
			90	User Defined							
28	Underground Tanks	EA									
			10	Oily Water Separator	EA						
			20	Water Storage	EA						
			30	Fuel Storage	EA						
						10	Layout and Excavation	m3			
						20	Install Tank	EA			
						30	Backfill	m3			
						90	User Defined				
			90	User Defined							
30	Site Drainage (excluding piping. For piping see 3.xx.xx.xx.85)	m									
			05	Storm Drainage	m						
						20	Culverts	EA			
						30	Catch Basins	EA			
						31	Trench Drains	EA			
						80	Manholes	EA			
						90	User Defined				
						10	Grease Interceptors	EA			
						15	Leaching Cesspools	EA			
						20	Sand Filters	EA			
						25	Siphon Tanks	EA			
						30	Septic Tanks	EA			
						31	Septic Field	m2			
						80	Manholes	EA			
						90	User Defined				
			20	De-watering	LS						
						10	Ditching	m			

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	L2 - SUBDIVISION	L2 UM	L3	L3 - CATEGORY	L3 UM	L	L4 - ITEM	L4 UM	L	L5 - DESCRIPTION	L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
						2	Pumping	MOS			
						3	Well Point System	MOS			
									1	Foundation	m
									2	Utility	m
									9	User Defined	
						9	User Defined				
			2	Sand Drains	EA						
			3	Disposal Wells	EA						
			3	Relief Wells	EA						
			9	User Defined							
32	Site Improvements	LS									
			0	Fencing	m						
						1	Chain Link	m			
						2	Security/Barbed Wire/Razor Wire	m			
						9	User Defined				
			1	Gates – Manual	EA						
			1	Gates – Motor Operated	EA						
						1	Personnel	EA			
						2	Vehicular	EA			
						9	User Defined				
			2	Parking Appurtenances	LS						
						0	Parking Lot Markings/Striping	m			
						1	Curbs	m			
						1	Gutters	m			
									0	Excavation	m3
									0	Backfill	m3
									0	Mud Matt/Seal Slabs	m3
									1	Formwork	m2
									1	Falsework	m2
									2	Reinforcing Steel	TN
									3	Embeds	kg
									3	Anchor Bolts (Embedded Only)	EA
									4	Concrete Placement	m3
									5	Strip/Clean/Rub	m2
						2	Parking Barriers	EA			
						3	Parking Bumpers/Wheel Stops	EA			
						3	Parking and Directional Signs	EA			
						9	User Defined				
			2	Walls	m						
						1	Stone	m2			
						2	Masonry	m2			
						4	Earthen/Soil	m2			
						9	User Defined				
			2	Guard Posts, & Rails	m						
			2	Bollards	EA						
			3	Landscaping	LS						
						0	Sod	m2			
						1	Seeding	m2			
						1	Plants	EA			
						2	Trees	EA			
						2	Shrubs	EA			
						3	Sprinkler System	m2			
						3	Liming	m2			
						9	User Defined				
			3	Signs	EA						
			9	User Defined							
34	Railroad Works	LS									
			1	New Track	m						
						1	Rail Steel	TN			
						2	Rail Ties	EA			
						9	User Defined				
			2	Trestle/Bridge	m						
			3	Ballast	m3						
			4	Rail Switch	EA						

LEVEL 2 L2	LEVEL 2 L2 - SUBDIVISION	LEVEL 2 L2 UM	LEVEL 3 L	LEVEL 3 L3 - CATEGORY	LEVEL 3 L3 UM	LEVEL 4 L4	LEVEL 4 L4 - ITEM	LEVEL 4 L4 UM	LEVEL 5 L5	LEVEL 5 L5 - DESCRIPTION	LEVEL 5 L5 UM
DIVISION 0 - CIVIL/SITE (Charge Lump Sum Contractors to Level 3											
			5	Traffic Control	EA						
			6	Upgrade existing system	LS						
			7	Rail Spur Unloading Area	LS						
			9	User Defined							
36	Marine Work (not concrete)	LS									
			0	Dredging	m3						
			1	Cofferdams	m3						
			1	Seawalls	m3						
			2	Bulkheads	m						
			2	Breakwater	m3						
			3	Docks and Facilities	EA						
			4	Barge Unloading Facilities	EA						
			4	Underwater Work	EA						
			9	User Defined							
88	Overtime (For Estimating purposes on	LS									
			1	Spot	LS						
			2	Scheduled	LS						
			9	User Defined							
90	User Defined										
92	Civil/Site Testing	EA									
			0	Subsurface Tests	EA						
			0	Standard Penetration Tests	EA						
			0	Test Borings	EA						
			1	Core Samples	EA						
			1	Seismic Testing	EA						
			2	Compaction Testing	EA						
			2	Pile Load Tests	EA						
			3	Percolation Test	EA						
			9	User Defined							

Abbreviations:

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EA - Each

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Section/unit designation structure:

Code	*Section/Unit designation*
1	Section/Unit 1
2	Section/Unit 2
3	Section/Unit 3
4	Section/Unit 4
5	Section/Unit 5
6	Section/Unit 6
7	Common plant related to Section/Unit 1 through 3
8	Common plant related to Section/Unit 4 through 6

L	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 SUBDIVISION	L3 UM	L	LEVEL 4 CATEGORY	L3 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 1 - CONCRETE (Charge Lump Sum subcontractors to Level 2 or 3 as appropriate)											
Work Step/ Craft Resp											
1	Cast In Place Concrete										
			1-	Major Foundations							
			11	CT's	m3						
			12	ST's	m3						
			13	Boilers/HRSG	m3						
			14	Cooling Towers	m3						
			15	ID/FD Fans	m3						
			16	Pulverizers	m3						
			17	Intake Structure	m3						
			2-	BOP Equipment Foundations							
			21	Matt / Large Block Pour > 500 CY	m3						
			23	Large Block Pours 50 to 500 CY	m3						
			25	Medium Block Pours 5 to 50 CY	m3						
			27	Small / Misc Pour < 5 CY	m3						
			3-	Slabs							
			31	Slab Area Paving & Mats	m3						
			33	Slab on Grade	m3						
			35	Elevated Slabs	m3						
			37	Area Paving	m3						
			39	Sidewalks, walkways and ramps	m3						
			4-	Grade Beams							
			41	Grade Beam Foundation	m3						
			43	Ring / Tank	m3						
			45	Concrete Trenches	m3						
			47	Retaining Wall Grade Beams	m3						
			50	Column	m3						
			60	Walls (Including Retaining Walls)	m3						
			70	Basins, Pits & Manholes	m3						
			8-	Duct Banks	m3						
			81	Formed	m3						
			82	Not Formed	m3						
			90	User Defined	m3						
						0	Mud Matt/Seal Slabs	m3			
						1	Formwork	m2			
						1	Falsework	m2			
						2	Reinforcing Steel	TN			
						3	Embeds	kg			
						3	Anchor Bolts (Embedded Only)	kg			
						4	Concrete Placement	m3			
						5	Strip/Clean/Rub	m2			
						9	User Defined				
									03	Buildings	m3
									02	Vessels	m3
									04	Shop-Fabricated Tanks	m3
									06	Field-Fabricated Tanks	m3
									11	CTG	m3
									13	STG Down Exhaust	m3
									14	STG Axial Exhaust	m3
									17	Compressors and Generators	m3
									22	Horizontal - HRSG	m3
									23	Vertical - HRSG	m3

L	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 SUBDIVISION	L3 UM	L3	LEVEL 4 CATEGORY	L3 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 1 - CONCRETE (Charge Lump Sum subcontractors to Level 2 or 3 as appropriate)											
									25	Fossil Fuel Boilers (PC, CFB, Oil Fired, etc)	m3
									27	Packaged Fired Heaters and Boilers	m3
									28	Field Fabricated	m3
									29	Stacks, Chimneys and Silencers	m3
									31	Air Cooled Condenser	m3
									35	Heat Exchanger Equipment	m3
									37	Cooling Towers	m3
									41	Fans and Exhaust Systems	m3
									43	Pumps	m3
									45	Marine /CW Support Equipment	m3
									51	Pretreatment System	m3
									52	Cycle Makeup Treatment System (Demin System)	m3
									53	Wastewater Treatment	m3
									54	Zero Discharge System	m3
									55	Chlorination Generation	m3
									57	Chemical Systems, Equipment and Skids	m3
									58	Systems/Equipment Packages	m3
									59	Fire and Safety Equipment	m3
									61	SCR Packages	m3
									62	Electrostatic Precipitators	m3
									63	Fabric Filter / Bag House	m3
									64	Wet Scrubbers	m3
									65	Dry / Semi Dry Scrubbers	m3
									66	Chiyoda Scrubbers	m3
									71	Coal Handling	m3
									72	Limestone Handling	m3
									73	Ash Handling	m3
									74	Gypsum Handling	m3
									75	Waste Handling	m3
									76	Cranes and Hoists	m3
									77	Other Moving Equipment	m3
									78	Plant Operations Support Equipment	m3
									80	Bus Duct	m3
									81	Electrical T&D (See Power Delivery)	m3
									82	Generator Breakers	m3
									83	Low Voltage - Switchgear	m3
									84	MCC (Motor Control Centers)	m3
									85	Med Voltage - Switchgear	m3
									86	Substation/Switchyards (See Power Delivery)	m3
									87	SUS (Secondary Unit Substations)	m3
									90	User Defined	m3
2	Precast Concrete	EA									
			02	Sleepers	m						
			05	Walls	m2						
			10	Beams	m						
			15	Columns	m						
			20	Floor Slab	m2						
			25	Tees	m						
			30	Man-holes/Vaults	EA						
			35	Culverts	EA						
			90	User Defined							
3	Shotcrete and Gunnite (Nonfireproofing)	m2									
			10	Buildings	m2						
			20	Underground/Tunnels	m2						
			90	User Defined							
4	Grout	m3									
			10	Epoxy	m3						
			40	Non-Shrink	m3						
			90	User Defined							
5	Concrete Rehabilitation, Patch, and Repair	LS									

L	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 SUBDIVISION	L3 UM	L3	LEVEL 4 CATEGORY	L3 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 1 - CONCRETE (Charge Lump Sum subcontractors to Level 2 or 3 as appropriate)											
8	Overtime (For Estimating purposes only)	LS									
			10	Spot	LS						
			20	Scheduled	LS						
			90	User Defined							
9	User Defined										
9	Concrete Testing	EA									

Abbreviations:

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EA - Each

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4 Section/Unit 4
5 Section/Unit 5
6 Section/Unit 6
7 Common plant related to Section/Unit 1 through 3
8 Common plant related to Section/Unit 4 through 6

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 2 - ARCHITECTURAL & METALS											
03	Buildings - PreProject	m2									
			01	Generation Building (BSA)	m2						
			02	Air Qual Control Bldg (BSB)	m2						
			03	Control Center Building (BSC)	m2						
			04	Administration Building (BSD)	m2						
			05	Security Building (BSE)	m2						
			06	Plant Services Building (BSF)	m2						
			07	Compr Gas Storage Bldg (BSG)	m2						
			08	Circ Water Pump House (BSH)	m2						
			09	Coal Car Unloading Bldg (BSI)	m2						
			10	Coal Crusher Building (BSJ)	m2						
			11	Coal Storage Barn (Silo) (BSK)	m2						
			12	Coal Reclaim Structure (BSL)	m2						
			13	Reagent Prep Bldg (BSM)	m2						
			14	Ash Wtr Recyc Pmp House (BSN)	m2						
			15	Water Treatment Building (BSO)	m2						
			16	Makeup Water Pump House (BSP)	m2						
			17	Yard Services Building (BSQ)	m2						
			18	Warehouses (BSR)	m2						
			19	FGD Byproduct Dewtr Bldg (BSS)	m2						
			20	FGD FO Air Blower Bldg (BST)	m2						
			90	Misc Bldgs (BSU)	m2						
			22	Fuel Oil Unloading (BSV)	m2						
			23	Gen Bldg - Boiler (BSX)	m2						
			24	Boiler Feed Pump Bldg (BSZ)	m2						
			34	MCC/DCS	m2						
			35	HRSG Electrical	m2						
			36	Electrical Building/Enclosure	m2						
			37	FW Pump House	m2						
			43	Electro-Chlorination/Chemical Feed	m2						
			28	Switchyard	m2						
			30	Chemical Storage	m2						
			32	Training and Safety	m2						
			38	Fire Station	m2						
			40	Guard House	m2						
			42	CEM Building/Equipment Shelters/Enclosures	m2						
			44	Vehicle Shop	m2						
			50	Canteen	m2						
			80	Residential/Camp	m2						
			90	User Defined							
						10	Steel Erection	TN			
						20	Wall Pre-fabrication and Erection	m2			
						30	Roof Pre-fabrication and erection	m2			
						40	Field Seams and Pipe Penetrations	EA			
						50	Doors, Window Installation, Frame Openings	EA			
						60	Roof/Wall enclosure Trim Work	LS			
						90	User Defined				
									05	Masonry	m2
									10	Woods and Plastics	m2
									15	Doors and Windows	EA
									20	Thermal and Moisture Protection	m2
									25	Interior Finishes	m2
									30	Special Coatings	m2
									35	Specialties and Furnishings	EA
									40	Metal Framing	TN
									45	Equipment Structural	TN
									50	Metal Decking	m2
									90	User Defined	
11	Structural Steel	TN									
				Pipe Racks - Modular Fabrication (Structural							
			10	Steel Only)	TN						
			11	Pipe Racks - Stick Built	TN						
			30	Buildings -Site Constructed - Steel	TN						
			41	Substation Structures	TN						

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 2 - ARCHITECTURAL & METALS											
			45	Other Structural Steel Shapes	TN						
			50	Transfer Towers/Junction Houses	TN						
			60	Conveyor Support Steel	TN						
			70	Crusher Structure	TN						
			80	Indoor Coal Storage Facility / Coal Barn	TN						
			90	User Defined							
						10	Light (0 - 20 lbs/lf)				
						20	Medium (21 - 60 lbs/lf)	TN			
						30	Heavy (61 - 200 lbs/lf)	TN			
						40	Extra Heavy (over 200 lbs/lf)	TN			
						90	User Defined				
13	Misc Metals (ie shop & field fab items)	TN									
			35	Grating /Decking/Checker Plate	m2						
			36	Fabricated Supports	TN						
			37	Handrail/Kickplates	m						
			40	Plate Work	TN						
						00	Misc Metals (ie shop & field fab items)	TN			
									03	Pipe	TN
									04	Equipment	TN
									05	Electrical	TN
									06	Instruments and Tubing	TN
									90	User Defined	
				Stair Stringers & Treads/Ladders/Caged							
			45	Ladders	m						
						10	Light (0 - 20 lbs/lf)	TN			
						20	Medium (21 - 60 lbs/lf)	TN			
						30	Heavy (61 - 200 lbs/lf)	TN			
						40	Extra Heavy (over 200 lbs/lf)	TN			
									05	Stairs	m
									10	Metal Stair Treads	m
									15	Handrails	m
									20	Ladders	m
									25	Caged Ladders	m
									30	Platforms	m
									90	User Defined	
15	Specialties										
			86	Hatches, Covers	TN						
			87	Penetrations	EA						
						00	Misc Metals (ie shop & field fab items)	TN			
									03	Pipe	EA
									04	Equipment	EA
									05	Electrical	EA
									06	Instruments and Tubing	EA
									90	User Defined	
			90	User Defined							
20	Duct and Breeching - Non-HVAC, (Non-Vendor Furnished)	TN									
			10	Ductwork / Casing Erection	TN						
			40	Access Doors / Ports	EA						
			90	User Defined							
30	Buildings - Site Constructed (Shells)	m2									
			10	Metal Panel	m2						
			20	Roof Panel	m2						
			30	Wall Panel	m2						
			40	Accessories	EA						
			50	Roofing/Roof Covering	m2						
			90	User Defined							
31	Equipment Shelters/Enclosures	m2									
									80	Residential/Camp	m2
									90	User Defined	
40	Architectural	LS									
			05	Masonry	m2						
						00	Architectural	LS			
									05	Clay Units	m2

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 2 - ARCHITECTURAL & METALS											
									10	Concrete Masonry Units	m2
									15	Concrete Bond Beams	m
									20	Glass Block	m2
									25	Stone	m2
									30	Reinforcement	kg
									90	User Defined	
			10	Woods and Plastics	m2						
									10	Woods	m2
									20	Plastics	m2
									90	User Defined	
			15	Doors and Windows	EA						
									10	Metal Doors and Frames	EA
									20	Wood Doors and Frames	EA
									30	Overhead Doors and Frames	EA
									40	Other Doors and Frames	EA
									50	Weather Stripping	m
									60	Hardware	EA
									70	Windows	EA
									90	User Defined	
			20	Thermal and Moisture Protection	m2						
									10	Sealants	m2
									20	Waterproofing	m2
									30	Flashing	m
									31	Gutters	m
									32	Downspouts	m
									40	Building Insulation	m2
									50	Roofing/Roof Coverings	m2
									90	User Defined	
			25	Interior Finishes	m2						
									10	Ceilings	m2
									20	Wall Systems	m2
									30	Wall Coverings	m2
									40	Floor Coverings	m2
									90	User Defined	
			35	Specialties and Furnishings	EA						
									10	Furnishings - Office	EA
									20	Cabinetry	EA
									30	Computer Floors	m2
									40	Office Equipment	EA
									50	Laboratory Equipment	EA
									51	Laboratory Furnishings/Furniture	EA
									60	Lounge/Restroom Furnishings and Acc	EA
									79	Fasteners, Nuts, Bolts, Washers, etc.	LS
									90	User Defined	
			40	Metal Framing	TN						
									10	Metal Studs/Wall Framing	TN
									20	Roof and Ceiling Joists	TN
									30	Steel Floor Decking	m2
									40	Steel Roof Decking	m2
									50	Steel Wall	m2
									90	User Defined	
			90	User Defined							
60	Building Electrical and Lighting										
			10	Electrical	m						
						10	Wiring	m			
						11	Wiring Devices (Switches, Plates, Receptacles, etc.)	EA			
						30	Boxes	EA			
						40	Panels	EA			
						50	Terminations	EA			
						90	User Defined				
						92	Testing	LS			
			20	Lighting	m2						
						20	Lighting	m2			
									10	Fixtures and Bulbs	EA

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 2 - ARCHITECTURAL & METALS											
									20	Fixture Supports	EA
									90	User Defined	
									92	Testing	LS
			90	User Defined							
65	Building Plumbing Systems	LS									
			00	Building Plumbing Systems	LS						
						00	Building Plumbing Systems	LS			
									10	Equipment	EA
									20	Fixtures	EA
									30	Pipe, Fittings and Valves	m
									40	Accessories	EA
									90	User Defined	
									92	Testing	LS
70	Building HVAC Systems	LS									
			00	Building HVAC Systems	LS						
						00	Building HVAC Systems	LS			
									10	Equipment	EA
									30	Duct and Fittings	m
									40	Accessories	EA
									90	User Defined	
									92	Testing - HVAC Balance	LS
88	Overtime (For Estimating purposes only)	LS									
			10	Spot	LS						
			20	Scheduled	LS						
			90	User Defined							
90	User Defined										
92	Architectural and Metals Testing	LS									
			00	Architectural and Metals Testing	LS						
						00	Architectural and Metals Testing	LS			
									10	Steel - Tensile	EA
									11	Steel - Hardness/Brinell	EA
									90	User Defined	

Abbreviations:

LS - Lump Sum
EA - Each

Note:
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Coding Structure:

A Cost Code is a set of digits developed as follows:

1. First digit identifies the section/unit as per section/unit designation structure.
2. Second digit identifies the Division as defined in this document.
3. Third digit onwards- L2 through L5 designation. Two digits for each level.

Section/unit designation structure:
Cod Section/Unit designation
1 Section/Unit 1
2 Section/Unit 2
3 Section/Unit 3
4 Section/Unit 4
5 Section/Unit 5
6 Section/Unit 6
7 Common plant related to Section/Unit 1 through 3
8 Common plant related to Section/Unit 4 through 6

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L	CATEGORY	L3 UM	L4	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 3 - PIPING											
2A	2B		3			4					
Grade/Fabrication	**Material**		**Size**			**Schedule**					
1	Carbon Steel	m									
2 AG (Shop Fabricated)	0 Stainless	m									
3 BG (Field Fabricated)	1 Moly - P91	m									
4 AG Field Fab	2 Moly - P22	m									
5 BG - Shop Fab	3 Moly - (P5, P11, Other)	m									
6 AG Circ Water	4 Plastic/HDPE/Fiber	m									
BG Circ Water	5 Cast Iron/Ductile Iron	m									
	6 Concrete / RCP/Concrete Lined	m									
	7 Corrugated Steel	m									
	8 Rubber Lined	m									
	9			All Tubing in Div 6	N/A						
				0 SB (less than 2 1/2")	m						
				1 2 1/2" to 4"	m						
				2 >4" to 8"	m						
				3 >8" to 12"	m						
				4 >12" to 18"	m						
				5 >18" to 24"	m						
				6 >24" to 30"	m						
				7 >30" to 42"	m						
				8 >42" to 60"	m						
				8 >60"	m						
						10 STD	m				
						20 XS	m				
						30 XXS	m				
73 Stress Relieving/ Heat Treating (Pre and Post)		EA									
				1 B&V Designed Piping	EA						
				1 Boiler Vendor Designed Piping	EA						
				1 Steam Turbine Designed Piping	EA						
				9 User Defined	EA						
75 Hot Taps		EA									
76 Tie-ins		EA									
77 Project Managered Hangers /Supports (for LB and SB Hot		EA									
78 Fittings (estimating Only)		EA									
79 Nuts/Bolts/Gaskets (Material Only)		LS									
80 Valves (including Motor Operated)- Material Only		EA									
				8 Piping Valves - Large Bore	EA						
				8 Piping Valves - Small Bore	EA						
				8 Steam Conditioning Valves - Large Bore	EA						
				8 Steam Conditioning Valves - Small Bore	EA						
				8 Control Valves - Large Bore	EA						
				8 Control Valves - Small Bore	EA						
				9 User Defined							
82 Specialty Items		EA									
				8 Piping Specialty Items - Large Bore	EA						
				8 Piping Specialty Items - Small Bore	EA						
85 Flushing/Pipe Cleaning/ Pigging		LS									
				1 Chemical Cleaning (Pipe and Boiler)	LS						
				1 Chem Clean waste disposal	LS						
				2 Flushing (as a start-up activity)	LS						
				2 Steam Blows	LS						
				3 Air /Gas Blows	LS						
				4 Hydro Blasting	LS						
				9 User Defined							
88 Overtime (For Estimating purposes only)		LS									
				1 Spot	LS						
				2 Scheduled	LS						
				9 User Defined							

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L	CATEGORY	L3 UM	L4	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 3 - PIPING											
92	Piping Testing /NDE/NDT	LS									
			1	B&V Designed Piping	EA						
			1	Boiler Vendor Designed Piping	EA						
			1	Steam Turbine Designed Piping	EA						
			1	Other Vendor Turbine Designed Piping	EA						
			9	User Defined							
90	User Defined										

Abbreviations:

LS - Lump Sum
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Note:
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Coding Structure:

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Section/unit designation structure:

Cod Section/Unit designation

1 Section/Unit 1
2 Section/Unit 2
3 Section/Unit 3
4 Section/Unit 4
5 Section/Unit 5
6 Section/Unit 6
7 Common plant related to Section/Unit 1 through 3
8 Common plant related to Section/Unit 4 through 6

L2	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 CATEGORY	L3 UM	L	LEVEL 4 ITEM	L4 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
0-	Tanks and Vessels	EA									
02	Vessels	EA									
			05	Towers and Columns	EA						
			10	Internals - Trays	EA						
			11	Internals - Packing	EA						
			12	Internals - Mist Eliminator	EA						
			14	LNG Storage	EA						
			20	Accumulators	EA						
			25	Collectors	EA						
			30	Deaerators	EA						
			35	Scrubbers (Non-AQC)	EA						
						1	Fuel Gas Scrubber	EA			
						2	Solids Handling System (Scrubber)	EA			
						9	User Defined				
			40	Skimmers	EA						
						1	Oily Water Skimmer	EA			
						9	User Defined				
			45	Separators	EA						
						1	Fuel Gas	EA			
						1	Oily Water	EA			
						9	User Defined				
			50	Compressed Air/Gas Storage	EA						
						1	Tanks	EA			
						2	Bottles	EA			
						9	User Defined				
			90	User Defined							
04	Shop-Fabricated Tanks	EA									
			04	Blowdown	EA						
			06	Condensate	EA						
			08	Potable Water	EA						
			10	Instrument Air	EA						
			12	Service Air	EA						
			14	Chemical Storage	EA						
			16	Caustic Storage	EA						
			18	Condensate Collection	EA						
			20	Acid Storage	EA						
			22	Ammonia Storage	EA						
			24	Neutralization	EA						
			26	Water Treating	EA						
			28	Drain Tank	EA						
			36	Surge Tank	EA						
			38	CCCW Head Tank							
			40	Fuel Day Tank							
			90	User Defined							
06	Field-Fabricated Tanks	EA									
			02	Raw Water/Firewater	EA						
			04	Raw Water	EA						
			06	Firewater	EA						
			08	Demin Water	EA						
			10	Seed Tank/Thickener	EA						
			12	Fuel Oil	EA						
			16	Condensate/Process Return	EA						
			20	Neutralization	EA						
			24	Service Water	EA						
			26	Service Water/Firewater	EA						
			28	Potable Water	EA						
			30	Wastewater Storage	EA						
			32	HSD Storage	EA						
			34	Naphtha Storage	EA						
			36	Lime (Limestone) Storage	EA						
			38	Coal Silos	EA						
			90	User Defined	EA						
13	STG Down Exhaust	EA									
14	STG Axial Exhaust										
			25	ST Vendor Supplied - Enclosure	m2						
			30	ST Vendor Supplied - Piping	m						
						1	Large Bore	m			

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L	ITEM	L4 UM	LEVEL 5 L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
						2	Small Bore	m			
									10	Carbon Steel	
									20	Stainless	
									30	Moly	
									90	User Defined	
			35	Lube Oil Flush	PC						
			40	ST Vendor Supplied - Off base skids and misc equipment	EA						
			41	ST Vendor Supplied - Turbine Centerline Erection - LP	PC						
			42	ST Vendor Supplied - Turbine Centerline Erection -HP-IP	PC						
			43	ST Vendor Supplied - Generator Erection	PC						
			44	ST Vendor Supplied - Excitation	PC						
			45	ST Vendor Supplied - Hydraulic System	PC						
			50	ST Vendor Supplied - Electrical	m						
						1	Raceway	m			
						2	Cable Pulls	m			
						3	Terminations	EA			
			60	ST Vendor Supplied - Instrumentation	EA						
			70	ST Vendor Supplied - Insulation / Lagging	m2						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
17	Compressors and Generators	EA									
			05	Black Start Generator	EA						
			10	Emergency Generator	EA						
			15	Gas Compressors	EA						
			20	Plant/Instrument Air Compressor Skids / Air Dryer	EA						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
25	Fossil Fuel Boilers (PC, CFB, Oil Fired, etc)										
			11	Vendor Structural Steel	TN						
						1	Light (0 - 20 lbs/lf)				
						2	Medium (21 - 60 lbs/lf)	TN			
						3	Heavy (61 - 200 lbs/lf)	TN			
						4	Extra Heavy (over 200 lbs/lf)	TN			
						9	User Defined				
			13	Stairs, Ladders and Platforms	TN						
			20	Boiler Ductwork Erection	TN						
						1	Primary Air Ductwork	TN			
									10	PA Fan Inlet Duct	TN
									20	PA Fan to Boiler	TN
						2	Secondary Air Ductwork	TN			
									10	FD Fan Inlet Duct	TN
									20	FD Fan to Air Heater	TN
									30	Air Heater to Boiler	TN
						3	Tertiary Air Ductwork	TN			
						4	Flue Gas Ductwork	TN			
									10	Boiler to Air Heater	TN
									20	Discharge of Air Heater	TN
						5	Windbox	TN			
						6	Duct Expansion Joints	TN			
						7	Dampers	TN			
						9	User Defined				
			28	Air Preheater	TN						
			29	Air Heater	TN						
						1	Basket Type	TN			
						2	Tube or Plate and Frame Type	TN			
			30	Vendor Process/Pressure Piping	m						
			31	Coal Piping	m						
						5	Large Bore	m			
						6	Small Bore	m			
									10	Carbon Steel	m
									20	Stainless	m
									30	Moly	m
									90	User Defined	
			40	Vendor Boiler Equipment	TN						

LEVEL 2			LEVEL 3		LEVEL 4		LEVEL 5	
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
						1	Fans	Ea			
									10	Primary Air	EA
									20	Secondary Air/Forced Draft	EA
									30	Influence Draft Fans	EA
						2	Pulverizers	EA			
						3	Burners/Ignitors	EA			
						4	Burner Management	EA			
						5	Soot Blowers	EA			
									10	Steam	EA
									20	Air	Ea
						6	Circulating Pumps	EA			
						7	Coal Feeders	EA			
						9	User Defined				
			42	Fluidized Bed Heat Exchanger	EA						
			44	Cyclones	EA						
			45	Silos, Bins & Hoppers	EA						
						1	Coal Feeders	EA			
						2	Ash Hoppers	EA			
						3	Coal Silos	EA			
						4	Limestone Silos	EA			
			46	Pulverizer/Mills	EA						
			50	Pressure Part Erection	TN						
						1	Drums & Vessels	EA			
									10	Drums / Tanks / Mixing Chambers	
									20	Attemperators / Desuperheaters	
						2	Tubes	EA			
						3	Headers & Links	EA			
						4	Assemblies / Modules	EA			
									10	Furnace / Waterwall	EA
									20	Superheater	EA
									30	Reheater	EA
									40	Economizer	EA
									50	Platen	EA
									90	User Defined	
						5	Downcomers	EA			
									10	Downcomers	EA
									20	Supply/Riser Tubes	EA
									30	Suction Manifold	EA
									90	User Defined	
						6	Vents and Drains	m			
			60	Non Pressure Parts	EA						
						1	Hangers	EA			
						2	Buckstays/Guides/Bumpers	EA			
						3	Casings & Seals	EA			
						4	Doors & Ports	EA			
			70	Vendor Supplied Insulation / Lagging	m2						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
27	Packaged Fired Heaters and Boilers	EA									
28	Field Fabricated	EA									
			05	Aux. Boiler Not main steam supply	EA						
			10	Incinerators and Flares	EA						
			15	Fired Reaction (Muffle Furnace, 2nd NH_3 Reforms)	EA						
			20	Vaporizers (Downtherm, Salt Bath)	EA						
			30	Auxiliary Duct Burners	EA						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
29	Stacks, Chimneys and Silencers	LF									
			11	Vendor Structural Steel	TN						
			21	Ductwork / Breeching	TN						
			24	Silencer	m						
			30	Stacks & Chimneys	m						
						1	Concrete	LF			

L2	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 CATEGORY	L3 UM	L	LEVEL 4 ITEM	L4 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
						2	Steel Stack	LF			
						3	Liner	m			
						4	Standby or Temporary	LF			
						8	Vendor Technical Assistance	Mhrs			
						9	User Defined				
			90	User Defined							
3-	Heat Exchange Equipment	EA									
31	Air Cooled Condenser	EA									
			11	Vendor Structural Steel	TN						
						1	Light (0 - 20 lbs/lf)				
						2	Medium (21 - 60 lbs/lf)	TN			
						3	Heavy (61 - 200 lbs/lf)	TN			
						4	Extra Heavy (over 200 lbs/lf)	TN			
						9	User Defined				
			13	Stairs, Ladders and Platforms	TN						
			20	Steam Ductwork Erection	TN						
			24	Siding/Windwalls	m2						
			25	Dampers/Distribution Panels	TN						
			40	Fans	EA						
			45	Condensing Modules	EA						
			48	Accessory Equipment	EA						
			50	Vendor Electrical	m						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
35	Heat Exchanger Equipment										
			10	Plate and Frame	EA						
			20	Shell and Tube	EA						
			30	Air Cooled	EA						
			90	User Defined							
						1	Main/surface Condenser	EA			
						2	Aux Cooling / Closed Cooling Heat Exchanger	EA			
						3	Condensate Coolers	EA			
						3	Condensate Pre-heater	EA			
						4	Fuel Gas Pre-heater	EA			
						4	Lube Oil Heater	EA			
						4	Fuel Oil Heater	EA			
						8	Vendor Technical Assistance	LS			
37	Cooling Towers										
			10	Forced Draft / Mechanical Cooling Tower	EA						
			20	Natural Draft / Hyperbolic Cooling Tower	EA						
						1	Wood	EA			
						3	Precast Concrete	EA			
						3	Cast in Place Concrete	EA			
						4	Steel	EA			
						5	Fiberglass	EA			
						9	User Defined				
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
4-	Pumps/Drivers/Rotating Equipment										
41	Fans and Exhaust Systems	EA									
			10	Fans	EA						
						1	Primary Air	EA			
						2	Secondary Air / Forced Draft	EA			
						3	Induced Draft	EA			
						9	User Defined				
									10	Centrifugal Fans	EA
									20	Vane Axial Fans	EA
									90	User Defined	
			20	Exhaust	EA						
						1	Vacuum Exhausters	EA			
						2	Seal Air	EA			
						9	User Defined				
			30	Blowers	EA						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
43	Pumps										

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L	ITEM	L4 UM	LEVEL 5 L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
			10	Centrifugal, Turbine Type. Vertical	EA						
			12	Centrifugal, Turbine Type, Horizontal	EA						
			20	Centrifugal, Split Case, Vertical	EA						
			22	Centrifugal, Split Case, Horizontal	EA						
			30	Centrifugal, Volute (Ash/Slurry), Vertical	EA						
			32	Centrifugal, Volute (Ash/Slurry), Horizontal	EA						
			55	Positive Displacement	EA						
						0	1-50 Horsepower	EA			
						1	50-100 Horsepower	EA			
						1	100-200 Horsepower	EA			
						2	200-500 Horsepower	EA			
						2	500-1,000 Horsepower	EA			
						3	1,250-2000 Horsepower	EA			
						3	2,250-4000 Horsepower	EA			
						4	4,500-6000 Horsepower	EA			
						4	7,000-8,000 Horsepower	EA			
						5	9,000-10,000 Horsepower	EA			
						9	User Defined				
									01	Circulating Water	EA
									02	Main Cooling Water	EA
									03	Auxiliary Water Cooling	EA
									04	Closed Loop Cooling Water	EA
									05	Boiler Feed Water	EA
									06	HRSG Blowdown	EA
									07	Auxiliary Boiler Feed Water	EA
									08	HRSG Recirculating	EA
									09	HP/IP Feed Water	EA
									10	LP Feed Water	EA
									11	Condensate	EA
									12	Condensate Vacuum	EA
									13	Condensate Transfer	EA
									14	Condensate Return	EA
									15	Deaerator Feed	EA
									16	Fuel Oil	EA
									17	Fuel Oil Transfer/Unloading	EA
									18	Potable Water	EA
									19	Wastewater Transfer	EA
									20	Oily Water	EA
									21	Fire Water	EA
									22	Makeup Water	EA
									23	Raw Water/Preheat	EA
									24	Demin Water/Transfer	EA
									28	Ammonia Injection	EA
									31	CTG Drain Sump	EA
									32	HRSG Drain Sump	EA
									33	STG Drain Sump	EA
									34	Fuel Oil Area Sump	EA
									35	Oily and Wastewater Sump	EA
									36	Demin Sump	EA
									37	Blowdown Water Sump	EA
									39	Ash Sluice Water	EA
									40	Slurry	EA
									41	Chemical Waste	EA
									43	Sulfur	EA
									44	Sulfur - Duplex Gen. Appl.	EA
									45	Sulfur - Special Submersible	EA
									46	Well Water	EA
									47	Jetting Pumps	EA
									48	Metering	EA
									49	General Service - Horizontal	EA
									50	General Service - Vertical	EA
									51	Fire - Electric	EA
									52	Fire - Diesel	EA

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L4	ITEM	L4 UM	LEVEL 5 L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
									53	Fire - Jockey	EA
									54	Recycle/Reclaim	EA
									55	Vacuum	EA
									56	Irrigation	EA
									57	Lube Oil Transfer	EA
									58	Screen Wash	EA
									59	Chemical Feed	EA
									80	Vendor Technical Assistance	Mhrs
									90	User Defined	
46	Lift Stations	EA									
47	Marine /CW Support Equipment	EA									
			03	Condensate Pump Cans (Steel)	EA						
			05	Sluice Gate	EA						
			10	Traveling Water Screens /Band Screens/Drum Screens	EA						
			20	Trash Rake	EA						
			30	Stop Logs	EA						
			40	Bar Screens	EA						
			41	Bar Screen Scraper	EA						
			50	Condenser Cleaning System	EA						
			60	Circ Water Debris Filter	EA						
			90	User Defined							
5-	Systems/Equipment Packages										
51	Pretreatment System	LS									
52	Cycle Makeup Treatment System (Demin Sy	LS									
53	Wastewater Treatment	LS									
54	Zero Discharge System	LS									
55	Chlorination Generation	LS									
			11	Vendor Supplied Structural Steel	TN						
			13	Stairs, Ladders and Platforms	TN						
			30	Vendor Piping	m						
						10	Large Bore	m			
						20	Small Bore	m			
			40	Vendor Equipment	EA						
			50	Vendor Electrical	m						
						10	Raceway	m			
						20	Cable Pulls	m			
						30	Terminations	EA			
			60	Vendor Instrumentation	EA						
			70	Vendor Insulation	m2						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
57	Chemical Systems, Equipment and Skids	LS									
			08	Potable Water Treatment System	LS						
			12	Cycle Chemical Feed	LS						
			14	Circulating Water Chemical Feed	LS						
			16	Condensate Polishing	LS						
			18	Sampling and Analysis	LS						
			20	Sewage Treatment System	LS						
			24	Circulating Water Sidestream Treatment	LS						
			26	Chlorine Gas Removal System (Scrubber)	LS						
			90	User Defined							
58	Systems/Equipment Packages										
			10	Vacuum Priming	EA						
			11	Fuel Oil Treatment	EA						
			12	Hydrogen System	EA						
			13	Nitrogen System	EA						
			14	Ammonia System - Aqueous	EA						
			15	Ammonia System - Anhydrous	EA						
			16	Urea System	EA						
			17	Carbon Dioxide Storage	EA						
			18	Packaged Process Equipment	EA						
			20	Autoclaves	EA						
			22	Classifiers	EA						
			28	Compactors	EA						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L	ITEM	L4 UM	LEVEL 5 L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
						3	Vendor Piping				
									10	Large Bore	m
									20	Small Bore	m
						4	Vendor Equipment				
						5	Vendor Electrical				
									10	Raceway	m
									20	Cable Pulls	m
									30	Terminations	EA
									90	User Defined	
						6	Vendor Instrumentation				
59	Fire and Safety Equipment	LS									
			01	Design Furnish & Erect Fire systems (Protection & Detection)	lot						
						0	Foam System	m2			
						1	CO_2 System	m2			
						1	Sprinkler System	m2			
						1	Preaction System	m2			
						2	Wet Pipe	m2			
						2	Dry Pipe	m2			
						5	Smoke Detection System	LS			
						5	Fire Detection System	LS			
						6	Fire Alarm Annunciator and Control System	EA			
						6	Fire Alarm Pull Stations	EA			
						6	Fire Alarm Horns/Strobe Lights	EA			
			30	Fire Hoses, Hydrants and Racks	EA						
			45	Eye Wash Stations & Safety Shower	LS						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
6-61	AQCS Equipment/Packages	EA									
	SCR Packages	EA									
			11	Vendor Supplied Structural Steel	TN						
			13	Stairs, Ladders and Platforms	TN						
			20	Ductwork / Casing Erection	TN						
			25	Internal Baffles	EA						
			27	Stack & Silencer Erection	TN						
			30	Vendor Piping	m						
						5	Large Bore	m			
						6	Small Bore	m			
			31	Catalyst	EA						
			40	Off base skids and misc equipment	EA						
			50	Vendor Electrical	m						
						1	Raceway	m			
						2	Cable Pulls	m			
						3	Terminations	EA			
			60	Vendor Instrumentation	EA						
			65	Vendor Control System	EA						
			70	Vendor Supplier Insulation	Mhrs						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
63	Fabric Filter / Bag House	EA									
			11	Vendor Structural Steel	TN						
						1	Light (0 - 20 lbs/lf)				
						2	Medium (21 - 60 lbs/lf)	TN			
						3	Heavy (61 - 200 lbs/lf)	TN			
						4	Extra Heavy (over 200 lbs/lf)	TN			
						9	User Defined				
			13	Stairs, Ladders and Platforms	TN						
			20	Ductwork / Casing Erection	TN						
						1	Side Enclosure	TN			
						2	Roof Enclosure	TN			
						3	Inlet Ductwork	TN			
						4	Outlet Ductwork	TN			
						5	Cleaning Air Ductwork	TN			

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L4	ITEM	L4 UM	LEVEL 5 L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
			25	Dampers/Distribution Panels/Vanes	TN						
			26	Duct Expansion Joints	TN						
			28	Cleaning Air Ductwork	TN						
			30	Fans	EA						
			40	Bags/Cages/Frames/Tubesheets	EA						
			45	Hoppers	EA						
			50	Vendor Electrical	m						
						1	Raceway	m			
						2	Cable Pulls	m			
						3	Terminations	EA			
						5	Electrical Equipment	EA			
			60	Vendor Instrumentation	EA						
			65	Vendor Control System	EA						
			70	Vendor Supplied Insulation / Lagging	m2						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
64	Wet Scrubbers	EA									
			11	Vendor Structural Steel	TN						
						1	Light (0 - 20 lbs/lf)				
						2	Medium (21 - 60 lbs/lf)	TN			
						3	Heavy (61 - 200 lbs/lf)	TN			
						4	Extra Heavy (over 200 lbs/lf)	TN			
						9	User Defined				
			13	Stairs, Ladders and Platforms	TN						
			14	Cladding / Siding	m2						
			20	Ductwork / Casing Erection (A36 Carbon Steel)	TN						
			21	Ductwork / Casing Erection (Fiberglass)	TN						
			22	Ductwork / Casing Erection (Alloy)	TN						
						1	Side Enclosure	TN			
						2	Roof Enclosure	TN			
						3	Inlet Ductwork	TN			
						4	Outlet Ductwork	TN			
						5	Purge Ductwork	TN			
						6	Bypass Ductwork	TN			
			25	Dampers/Distribution Panels/Vanes	TN						
			26	Duct Expansion Joints	TN						
			29	Casing Linings	m2						
			30	Vendor Piping	m						
						5	Large Bore	m			
						6	Small Bore	m			
									10	Carbon Steel	m
									20	Rubber Lined CS	m
									20	Stainless	m
									30	Plastic/HDPE/Fiber	m
			40	Scrubber Modules	TN						
			41	Mist Eliminators	TN						
			42	Spray Dryer Absorbers	TN						
			44	Scrubber Reheater	TN						
			48	Accessory Equipment	TN						
						1	Tanks and Vessels	EA			
									10	Reaction Tanks/Mixers/Tanks	EA
									20	Quench Tanks/Sprays	EA
									90	User Defined	
						2	Fans	EA			
						3	Pumps	EA			
						4	Air Compressors	EA			
						5	Slurry Sprays	EA			
						6	Lime Mills	EA			
						7	Rotary Feeders	EA			
			50	Vendor Electrical	m						
						1	Raceway	m			
						2	Cable Pulls	m			
						3	Terminations	EA			
						5	Electrical Equipment	EA			

LEVEL 2			LEVEL 3		LEVEL 4		LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	L3 UM	L	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT										
					9	User Defined				
			60	Vendor Instrumentation	EA					
			65	Vendor Control System	EA					
			70	Vendor Supplied Insulation	m2					
			80	Vendor TA Time	Mhrs					
			90	User Defined						
7-	Moving and Handling Equipment	EA								
71	Coal Handling	EA								
72	Limestone Handling	EA								
73	Ash Handling	EA								
74	Gypsum Handling	EA								
75	Waste Handling	EA								
			11	Vendor Structural Steel	TN					
					5	Transfer Towers/Junction Houses	TN			
					6	Conveyor Support Steel	TN			
					7	Crusher Structure	TN			
					8	Indoor Coal Storage Facility / Coal Barn	TN			
					9	User Defined	TN			
								10	Light (0 - 20 lbs/lf)	
								20	Medium (21 - 60 lbs/lf)	TN
								30	Heavy (61 - 200 lbs/lf)	TN
								40	Extra Heavy (over 200 lbs/lf)	TN
								90	User Defined	
			13	Stairs, Ladders and Platforms	TN					
			14	Cladding / Siding	m2					
			30	Conveyor Systems	m					
					1	Belt	m			
					2	Screw	m			
					3	Drag Chain	m			
								15	Metal Detector	EA
								20	Magnetic Separators	EA
								25	Scales	EA
								30	Trippers	EA
								40	Drives and Pulleys	EA
								50	Hoods and Covers	m
								90	User Defined	
					4	Feeders	EA			
					0					
								05	Belt	EA
								10	Rotary Plow/Air Lock	EA
								15	Vibrating	EA
								20	Weigh	EA
								25	Magnetic	EA
								30	Slide Gates and Chutework	EA
								35	Flotron	EA
								40	Chemical	EA
								90	User Defined	
					9	User Defined				
			32	Elevators - Material	EA					
			36	Scrubber Solids Equipment	EA					
					1	Tanks and Vessels	EA			
								10	Thickener Feed Tank	EA
								20	Thickener Overflow Tank	EA
								90	User Defined	
					2	Fans	EA			
					3	Pumps	EA			
								10	Flocculent additive System	EA
								20	Filter Feed	EA
								30	Vacuum	EA
								40	Filtrate	EA
								90	User Defined	
					4	Thickener	EA			
					5	Filter Blower/Belts/Pug Mill Mixer	EA			
					9	User Defined				
			40	Unloading Systems	EA					
					1	Rail Car - Bottom Dump	EA			
					2	Rail Car - Rotary Dump	EA			

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L	ITEM	L4 UM	LEVEL 5 L5	DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
						3	Barge / Ship Unloaders	EA			
			42	Stacker / Reclaimer	EA						
						1	Fixed Boom Conveyor	EA			
						1	Radial Stacker	EA			
						2	Traveling Stacker	EA			
						2	Bucket Wheel Stacker / Reclaimer	EA			
						3	Traveling Tripper	EA			
						3	Portal Stacker Reclaimer	EA			
						4	Drum Reclaimer	EA			
						4	Stationary Feeders	EA			
						5	Rotary Plow Feeder	EA			
						9	User Defined				
			44	Bins & Hoppers	EA						
						0	Bins	EA			
						1	Hoppers	EA			
			45	Silos	EA						
						2	Concrete Silo	EA			
						2	Steel Silo	EA			
						9	User Defined				
			46	Crushers, Grinders, Agitators, Blenders, Mixers, and Mills (Pulverize	EA						
						0	Pulverizers	EA			
						1	Clink Grinders	EA			
						1	Ball Mills	EA			
						2	Crusher (Coal, Limestone, etc.)	EA			
						2	Agitators	EA			
						3	Blenders	EA			
						3	Mixers	EA			
						9	User Defined				
			48	Dust Collection / Suppression	EA						
			49	Coal Sampling Systems	EA						
			50	Vendor Electrical	m						
						1	Raceway	m			
						2	Cable Pulls	m			
						3	Terminations	EA			
						5	Electrical Equipment	EA			
						9	User Defined				
			60	Vendor Instrumentation	EA						
			65	Vendor Control System	EA						
			70	Vendor Supplied Insulation	m2						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
76	Cranes and Hoists	EA									
			02	Bridge Crane - CTG	EA						
			04	Bridge Crane - STG	EA						
			06	Bridge Crane - Cooling Water Pumps	EA						
			08	Bridge Crane - Maintenance Shop	EA						
			10	Jib Cranes	EA						
			12	Crane Rail	m						
			14	Hoists - Manual	EA						
			16	Hoists - Motor Operated	EA						
			20	Gantry Crane	EA						
			22	Semi-Gantry Crane	EA						
			30	Monorails	EA						
			80	Vendor TA Time	Mhrs						
			90	User Defined							
77	Other Moving Equipment										
			19	People Moving Equipment /Elevators/Man Lifts	EA						
			85	Handling Carts, Trucks	EA						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
78	Plant Operations Support Equipment	EA									
			01	Dozers	EA						
			02	Scrapers	EA						
			03	Front End Loaders	EA						
			04	Clamshells and Other Excavating Equipment	EA						
			05	Forklifts	EA						
			10	Cherry Pickers	EA						

L2	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 CATEGORY	L3 UM	L4	LEVEL 4 ITEM	L4 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 4 - MECHANICAL EQUIPMENT											
			15	Cranes	EA						
			20	Machine Shop Tools	EA						
			25	Maintenance Shop Tools	EA						
			30	Fire Trucks	EA						
			32	Dust Suppression Water Truck	EA						
			35	Pickups	EA						
			36	Construction/Heavy Trucks	EA						
			40	Golf Carts/Four Wheelers	EA						
			45	Bicycles	EA						
			80	Vendor Technical Assistance	Mhrs						
			90	User Defined							
84	Oil, Chemical and Material Fills	LS									
			10	Turbine Oil Fills	LS						
			20	Catalyst (if purchased separately)	LS						
			30	Ammonia	LS						
			40	Limestone	LS						
			50	Coal	LS						
			60	Cycle Chemicals	LS						
			90	User Defined	LS						
88	Overtime (For Estimating purposes only)	LS									
			10	Spot	LS						
			20	Scheduled	LS						
			90	User Defined							
90	User Defined										
91	Heavy Haul	EA									
			08	CTG	EA						
			10	STG	EA						
			12	Boiler / HRSG	EA						
			90	User Defined							
92	Mechanical Equipment Testing	LS									
			10	NDE	EA						
			20	Post Weld Heat Treat	EA						
			90	User Defined							

Abbreviations:

LS - Lump Sum
EA - Each

Note:
Please consult with the Project Manager before creating any user defined accounts.

Coding Structure:

A Cost Code is a set of digits developed as follows:

1. First digit identifies the section/unit as per section/unit designation structure.
2. Second digit identifies the Division as defined in this document.
3. Third digit onwards- L2 through L5 designation. Two digits for each level.

Section/unit designation structure:

Code	*Section/Unit designation*
1	Section/Unit 1
2	Section/Unit 2
3	Section/Unit 3
4	Section/Unit 4
5	Section/Unit 5
6	Section/Unit 6
7	Common plant related to Section/Unit 1 through 3
8	Common plant related to Section/Unit 4 through 6

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 5 - ELECTRICAL											
11	Below Ground / Embedded Conduit										
13	Above Ground Conduit										
			20	PVC	m						
			21	RGS	m						
			25	Flexible	m						
						0	< =1" (2.54 cm)	m			
						0	< =2" (5.08 cm)	m			
						0	3" (7.2 cm)	m			
						0	4" (10.16 cm)	m			
						0	5" (12.70 cm)	m			
						0	6" (15.24 cm)	m			
			90	Other/User Defined							
21	Cable Pulling										
22	Terminations										
			21	Wire/Conductors/Cable - High Voltage > 15 kV	m						
			22	Wire/Conductors/Cable - Med Voltage 1000V to 15 kV	m						
			23	Wire/Conductors/Cable - Low Voltage < 1000V	m						
			24	Wire/Conductors/Cable - Control	m						
			25	Wire/Conductors/Cable - Instrument and T/C	m						
			26	Fiber Optic	m						
						0	#1/0 through 1000M cm (53.49 - 507.00 mm^2)				
						1	#8 through #1 (8.37 - 42.41 mm^2)				
						1	#22 through #10 (0.324 - 6.26 mm^2)				
						9	User Defined				
31	Grounding /Lightning Protection	m									
			06	Ground Cable	m						
			10	Exothermic Connections (Cadweld)	EA						
			20	Compression Connections/Splices	EA						
			90	User Defined							
			92	Testing	LS						
32	Electrical Heat Tracing	m									
			10	Heat Trace Cable Application to Pipe and Equipment	m						
			20	Aux Power Distribution	m						
						1	Wire/Cable/Conductor	m			
						2	Conduit	m			
						5	Control Boxes	EA			
						6	Transformers	EA			
33	Cathodic Protection	EA									
			10	Impressed Current							
			20	Sacrificial Anodes							
						0	Anodes	EA			
						1	Wire, Cable and Cable Accessories	m			
						2	Conduit	m			
						2	Ground Wells	EA			
						3	Field Test Stations	EA			
						4	Isolation Flange Kits and Isolators	EA			
						4	Coating and Pipe Connections (e.g., Exot	EA			
						9	User Defined				
						9	Testing	EA			
35	Communications Systems	LS									
						0	Plant LAN/Computer System	LS			
						1	Plant Fiber Optic System	LS			
						1	Plant Phone System	LS			
						2	Plant PA System	LS			
						2	Plant CCTV System/Security	LS			
						3	Radios	EA			
						3	Pagers	EA			
						9	User Defined				
									10	Cable	m
									20	Conduit	m
									30	Patch Panels	EA
									52	Hardware / Equipment	EA
									50	Terminations	EA
									90	User Defined	
									92	Testing	EA
36	Electrical Accessories	EA									

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 5 - ELECTRICAL											
						0	Separately Mounted Motor Starters	EA			
									1	Size 0	EA
									1	Size 1	EA
									1	Size 2	EA
									9	User Defined	EA
						0	Consoles	EA			
						1	Cabinets and Panels	EA			
									0	Size 96x18x18	EA
									1	Size 96x24x24	EA
									1	Size 96x24x36	EA
									9	User Defined	
						1	Panel boards	EA			
									0	100A through 200A	EA
									1	400A through 600A	EA
									9	User Defined	EA
						1	Protective Relay Panels	EA			
						3	Junction Boxes (Track as LF of Conduit?)	EA			
									1	24"x24"x12"	EA
									1	36"x36"x18"	EA
									2	48"x48"x24"	EA
									9	User Defined	
						4	Disconnect Switches	EA			
									0	30A through 100A	EA
									1	200A through 400A	EA
									2	600A through 1200A	EA
									9	User Defined	
						4	Welding Receptacles	EA			
									0	480 Vac, 30A	EA
									1	480 Vac, 60A	EA
									9	User Defined	EA
						6	Pull Boxes (Track as LF of Conduit?)	EA			
						7	Meters	EA			
						7	Surge Arrestors	EA			
37	Lighting Site/Plant Lighting & Emergency lighting	m									
			10	Wire/Conductors/Cable	m						
			20	Conduit	m						
			80	Fixtures, Accessories, Fixture Supports, Poles, etc.	EA						
			90	User Defined							
38	Essential AC and DC Systems	EA									
			10	Battery Charger	EA						
						1	480 Vac - 125 Vdc	EA			
						1	480 Vac - 250 Vdc	EA			
						9	User Defined				
			20	Batteries	EA						
						2	125 Vdc	EA			
						2	250 Vdc	EA			
						9	User Defined				
			30	Inverters	EA						
						3	125 Vdc - 120 Vac, 1 Phase	EA			
						3	125 Vdc - 120/208 Vac, 3 Phase	EA			
						3	250 Vdc - 120 Vac, 1 Phase	EA			
						3	250 Vdc - 120/208 Vac, 3 Phase	EA			
						9	User Defined				
			40	Isolation Xfmr	EA						
						4	480 Vac - 120 Vac, 1 Phase	EA			
						4	480 Vac - 120/208 Vac, 3 Phase	EA			
						9	User Defined				
			50	Main DC Panelboard	EA						
						5	125 Vdc, Indoor	EA			
						5	125 Vdc, Outdoor	EA			
						5	250 Vdc, Indoor	EA			
						5	250 Vdc, Outdoor	EA			
						9	User Defined				
			60	Main AC Panelboard	EA						
						6	120 Vac, 1 Phase, Indoor	EA			

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 5 - ELECTRICAL											
						6	120 Vac, 1 Phase, Outdoor	EA			
						6	120/208 Vac, 3 Phase, Indoor	EA			
						6	120/208 Vac, 3 Phase, Outdoor	EA			
						9	User Defined				
			70	Converters (DC/DC)	EA						
			90	User Defined	EA						
39	Security Systems	LS									
41	Cable Tray	m									
42	Cable Tray Covers	m									
43	Wire Way	m									
			20	Fiberglass	m						
			21	RGS	m						
			22	Aluminum	m						
						4	cm)	m			
						4	cm)	m			
						4	cm)	m			
						4	cm)	m			
						4	cm)	m			
						6	cm)	m			
						6	cm)	m			
						6	cm)	m			
						6	cm)	m			
						6	cm)	m			
						9	User Defined				
									0	Ladder	
									0	Solid Bottom	
50	Bus Duct										
			52	Iso Phase Bus Duct	m						
			54	Non Seg Bus Duct	m						
						2	800 - 1200 Amp	m			
						2	1600 - 3200 Amp	m			
						3	4000 - 6000 Amp	m			
						4	6300 Amp	EA			
						4	7000 Amp	m			
						4	7500 Amp	EA			
						4	8000 Amp	m			
						5	9000 Amp	m			
						5	10000 Amp	EA			
						5	11000 Amp	m			
						5	11500 Amp	EA			
						5	12000 Amp	EA			
						5	12000 Amp	m			
						6	14000 Amp	EA			
						9	User Defined				
									5	Straight	m
									5	Fittings	EA
									5	Transition Pieces	m
									5	Terminations - Generator	EA
									5	Terminations - Gen Step-up Xfmr	EA
									5	Terminations - Unit Aux Xfmr	EA
									5	Terminations - Switchgear/Other	EA
									6	Wall Penetrations	EA
									8	Purchased Supports	EA
									9	User Defined	
61	Med Voltage - Switchgear	EA									
63	Low Voltage - Switchgear	EA									
65	SUS (Secondary Unit Substations)	EA									
67	MCC (Motor Control Centers)	EA									
71	Generator Breakers	EA									
						1	< or = 6300 AMP				
						2	> 6300 to < or = 7500	EA			
						3	> 7500 to < or = 10000	EA			
						4	> 10000 to < or = 11500	EA			
						5	> 11500 to < or = 12000	EA			
						6	> 12000 to < or = 14000	EA			

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 5 - ELECTRICAL											
						7	> 14000	EA			
						9	User Defined				
73	Transformers	EA									
74	Transformer Oil Fill	EA									
			10	Generator Step-up Xfmr	EA						
			24	Unit Auxiliary Xfmr	EA						
			30	Station Auxiliary Xfmr	EA						
			46	Static Start Isolation	EA						
			48	Generator Neutral Grounding	EA						
			50	Lighting, Distribution or Dry Type	EA						
			52	Dedicated Equipment Power Supply	EA						
			54	T&D/ Substation	EA						
			56	Voltage Regulating	EA						
			90	User Defined							
						1	5 MVA	EA			
						1	10 MVA	EA			
						1	12.5 MVA	EA			
						1	20 MVA	EA			
						1	25 MVA	EA			
						2	30 MVA	EA			
						2	40 MVA	EA			
						2	50 MVA	EA			
						2	75 MVA	EA			
						2	100 MVA	EA			
						3	150 MVA	EA			
						3	200 MVA	EA			
						3	215 MVA	EA			
						3	225 MVA	EA			
						3	250 MVA	EA			
						4	300 MVA	EA			
						4	350 MVA	EA			
						4	400 MVA	EA			
						4	450 MVA	EA			
						4	500 MVA	EA			
						9	User Defined				
									1	< or = 29.5 kV	
									2	>29.5 kV to = 115 kV	
									3	>115 kV to 138 kV	
									4	>138 kV to 169 kV	
									5	>169 kV to 345 kV	
									6	>345 kV to = 500 kV	
									7	>500 kV	
									9	User Defined	
83	Substation/Switchyards (See Power Delivery)	LS									
			50	Electrical - Less Than 69 kV	m						
			51	Electrical - 69 kV	m						
			52	Electrical - 115 kV	m						
			53	Electrical - 138 kV	m						
			54	Electrical - 169 kV	m						
			55	Electrical - 230 kV	m						
			56	Electrical - 345 kV	m						
			57	Electrical - 500 kV	m						
						0	Overhead Line Wire Drops	m			
						0	Cable/Conductors	m			
						0	Conduit	m			
						0	Cable Tray	m			
						1	Bus	m			
									0	Tubular	m
									0	Strain	m
									0	Isophase	m
									1	Nonseg	m
									9	User Defined	
						1	Switchgear/MCCs	EA			
						1	Transformer	EA			
						2	Electrical Accessories	EA			
									1	Relay Cabinets/Panels	EA
									2	Wireways	m

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L	DESCRIPTION	L5 UM
DIVISION 5 - ELECTRICAL											
									3	Circuit Breakers	EA
									4	Switches and Disconnects	EA
									7	Meters/Metering Units	EA
									7	Surge Arrestor	EA
									7	Potential Transformer	EA
									7	Current Transformer	EA
									9	User Defined	
						2	Lighting	m			
						2	DC System (Emergency Power/Light)	EA			
						3	Grounding	m			
						3	Lightning Protection	EA			
						8	Purchased Hangers and Supports	EA			
						9	User Defined				
			90	User Defined							
85	Electrical T&D (See Power Delivery)	LS									
88	Overtime (For Estimating purposes only)	LS									
			10	Spot	LS						
			20	Scheduled	LS						
			90	User Defined							
90	User Defined										
91	Heavy Haul	EA									
			15	Transformer	EA						
			90	User Defined							
92	Electrical Testing										
			30	Hi-Potential for 5 kV and above	EA						
			35	Megger	EA						
			40	Continuity Check/Ring Out	EA						
			90	User Defined							

Abbreviations:

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LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L4	ITEM	L4 UM	LEVEL5 L5	DESCRIPTION	L5 UM
DIVISION 6 - CONTROL SYSTEMS & INSTRUMENTATION											
02	Instruments										
			02	Instruments (in-line)	EA						
						05	Controllers and Recorders	EA			
						10	Indicators	EA			
						15	Transmitters	EA			
						20	Switches	EA			
									0	Flow	EA
									1	Level	EA
									1	Pressure	EA
									2	Temperature	EA
									2	Analyzer	EA
									3	Limit	EA
									9	User Defined	
						24	Flow Computer	EA			
						25	Converters/Transducers	EA			
									1	Shop Mounted	EA
									2	Field Mounted	EA
									9	User Defined	
						30	Thermowells and Temperature Instruments	EA			
									0	Test Wells	EA
									1	With Thermocouple	EA
									1	With RTD	EA
									2	With Indicator	EA
									2	With Switch	EA
									9	User Defined	
						90	User Defined				
			04	Primary Flow Elements and Meters	EA						
						10	Orifice Plates	EA			
						20	Flow Nozzles	EA			
						30	Flow Meters	EA			
						90	User Defined				
06	Control Systems	EA									
			02	Local Control Stations	EA						
			10	DCIS/DCS	EA						
			20	PLC	EA						
			30	SCADA	EA						
			40	Control Drives	EA						
			50	Material Handling Control System	EA						
			90	User Defined							
08	Monitoring Systems	EA									
			02	Flue Gas Monitoring (O_2, CO_2, and Nox SO_2, etc	EA						
			02	Gas Chromatograph	EA						
			04	Weather	EA						
			10	CEMS	EA						
			25	Field Device Management System (FDMS/AMS)	EA						
			30	Vibration	EA						
			40	Moisture	EA						
			90	User Defined							
51	Tubing - Stick	m									
52	Tubing - Preinsulated/Pre-heat Traced	m									
			10	Copper	m						
			20	Stainless	m						
			40	Carbon Steel	m						
			50	Galvanized	m						
			90	User Defined							
						01	1/2"	m			
						02	3/4"	m			
						03	1"	m			
						04	1-1/4"	m			
						05	1-1/2"	m			
						06	2"	m			

LEVEL 2 L2	SUBDIVISION	L2 UM	LEVEL 3 L3	CATEGORY	L3 UM	LEVEL 4 L4	ITEM	L4 UM	LEVEL5 L5	DESCRIPTION	L5 UM
DIVISION 6 - CONTROL SYSTEMS & INSTRUMENTATION											
						90	User Defined				
									0	Process	m
									1	Instrument	m
									1	Sample Line	m
									2	Hydraulic/Lube Oil	m
									2	Air Lines	m
									9	User Defined	
80	Purchased Instrument Enclosures, Racks, Trays, Stands, and Supports	EA									
						05	Enclosures	EA			
						10	Racks	m			
						15	Trays	m			
						20	Stands	EA			
						25	Supports	EA			
						30	Unistrut (or Equal)	m			
						90	User Defined				
88	Overtime (For Estimating purposes only)	LS									
			10	Spot	LS						
			20	Scheduled	LS						
			90	User Defined							
90	User Defined										
92	Control Systems and Instrumentation Testing	LS									
			10	Instrument Calibration	EA						
			20	Functional Loopchecks	EA						
			30	Meggar Tests	EA						
			90	User Defined							

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L2	LEVEL 2 SUBDIVISION	L2 UM	L3	LEVEL 3 CATEGORY	L3 UM	L4	LEVEL 4 ITEM	L4 UM	L5	LEVEL 5 DESCRIPTION	L5 UM
DIVISION 7 - COATINGS - PAINT, INSULATION, and FIREPROOFING											
1	Paint	m2									
			1	Field Painting	m2						
			1	Field Touch up Paint	m2						
						03	Piping	m2			
						04	Equipment	m2			
						06	Steel	m2			
						07	Ductwork/casing	m2			
									01	Primer Coat Only	m2
									02	Primer and Top Coat	m2
									03	Three Coat Paint System	m2
									04	Four Coat Paint System	m2
									05	Five Coat Paint System	m2
									90	User Defined	
2	Insulation	m2									
			0	Piping	m2						
			0	Equipment	m2						
			4	Duct and Ductwork	m2						
						05	Calcium Silicate	m2			
						06	Calcium Silicate w/Al Jacketing and Lagging	m2			
						10	Mineral Wool	m2			
						11	Mineral Wool w/Al Jacketing and Lagging	m2			
						21	Urethane	m2			
						23	Sprayed Urethane	m2			
						30	Blankets	m2			
						31	Blankets w/Al Jacketing and Lagging	m2			
						40	Ceramic Fiber	m2			
						41	Ceramic Fiber w/Al Jacketing and Lagging	m2			
						50	Lagging	m2			
						60	Rock Wool	m2			
						90	User Defined				
3	Fireproofing	m2									
			0	Piping	m2						
			0	Equipment	m2						
			0	Structural Steel	m2						
			4	Duct	m2						
			9	User Defined							
4	Refractory Coatings	m2									
			0	Equipment	m2						
			4	Duct	m2						
			9	User Defined							
						10	Nelson Studs	EA			
						20	Coating	m2			
						30	Curing	m2			
						90	User Defined				
5	Special Coatings	m2									
			0	Coat and Wrap - Pipe, if done on site	m2						
			1	Chemical Resistant	m2						
			2	Tank Interior Coatings	m2						
			3	Galvanizing (Hot Dip)	m2						
8	Overtime (For Estimating purposes only)	LS									
			1	Spot	LS						
			2	Scheduled	LS						
			9	User Defined							
9	Testing										

LEVEL 2			LEVEL 3			LEVEL 4			LEVEL 5		
L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L5	DESCRIPTION	L5 UM

DIVISION 7 - COATINGS - PAINT, INSULATION, and FIREPROOFING

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L2	SUBDIVISION	L2 UM	L3	CATEGORY	L3 UM	L4	ITEM	L4 UM	L5	DESCRIPTION	L5 UM
DIVISION 8 - CONSTRUCTION INDIRECTS											
31	Field Office Expense	MOS									
33	Temporary Facilities										
35	Site Services	MOS									
36	Winter/Weather Protection	LS									
50	Construction Equipment	MOS									
51	Equipment Repair/Maintenance/Oilers (Labor)	Mhrs									
55	Small Tools and Consumables	LS									
			05	Hand Tools	LS						
			10	Welding Wire and Rods	LS						
			15	Welding Gases	LS						
			20	Tool Storage / Gang Boxes	LS						
			35	Power Cords	LS						
			40	Rigging	LS						
			80	Small Tool Repair/Maintenance	LS						
			90	User Defined							
60	Safety	LS									
70	Start-Up and Preoperational Testing	LS									
			10	Startup Spares	LS						
			31	First Fills (BOP)	LS						
			40	Startup Consumables	LS						
			50	Craft Startup Support	Mhrs						
			60	Startup Testing & Inst. Equipment	EA						
			90	User Defined							
71	Performance Testing	LS									
			05	Capacity Tests	LS						
			10	Emissions Tests	LS						
			15	Testing Assistance	LS						
			20	Reliability Test	LS						
			25	Availability Test	LS						
			30	Acceptance Test	LS						
			90	User Defined							
82	Permits	EA									

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