

Function Definitions

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Operations

Definition	All activities associated with the day-to-day operations of the station.
Scope	All activities listed below, whether performed by company personnel or contractors, operations, maintenance, or support personnel, irrespective of whether these personnel are part of the station's budget.
Activities	<p>Control room operations</p> <ul style="list-style-type: none">• Monitoring plant operations from the control room• Coordination with system operations• Response to alarms• Stand-by time• Collection of operations and regulatory data• Outage scheduling and coordination• Generation dispatch <p>Waterway operations</p> <ul style="list-style-type: none">• Hydraulic dispatch• Ice breaking• Waterway patrol• Water flow monitoring• Water Management <p>Station operations</p> <ul style="list-style-type: none">• Response to alarms• In-plant switching• Load transfer• Travel time• Stand-by time• Writing instructions, obtaining clearances• Environmental and safety inspections• Emergency generator• Station service throwover <p>Supervision, clerical, technical and non-project engineering support</p> <ul style="list-style-type: none">• All technical and engineering support related to operations• Supervision• Clerical support

Function Definitions

Costs

Nonlabor costs include:

- Materials used to support the above activities
- Clothing and safety apparel
- Water management costs
- Station service (electric bill)

Important Notes

1. Inspections performed by operators are categorized as Station Maintenance. Account for all time spent on the following types of inspections under Station Maintenance:
 - Check equipment readings
 - Checks for leaks and spills
 - Walk throughs
 - Exercising of equipment (fans, pumps, etc.)
2. Account for fleet and boat costs under On-Site Support or Off-Site Support.

Station Maintenance

Definition All activities associated with the maintenance of rotating equipment and non-rotating electrical components of the plant, from and including the headgate or final valve up to the generator step-up transformer (GSU).

Scope All activities listed below, whether performed by company personnel or contractors, operations, maintenance, or support personnel, irrespective of whether these personnel are part of the station's budget.

Activities Station protection, controls and communication links maintenance

- Calibration and functional testing of plant relaying and controls
- Repair and troubleshooting of all station system communication links and systems

Turbine/generator maintenance

- Preventive/predictive maintenance
- Corrective maintenance
- Station inspections with checklist (often performed by operators)
- Diagnostic tests
- Minor maintenance with equipment out-of-service
- Periodic inspections of the equipment out-of-service
- Governor pump maintenance/repairs
- Brake shoe maintenance
- Inspect bearings
- Exciter maintenance

Civil/mechanical maintenance performed within the plant

- Headgate maintenance
- Draft tube/runner maintenance
- Crane maintenance
- Powerhouse breaker mechanism inspections
- Shop personnel that support Station Maintenance
- Stores personnel that support Station Maintenance
- Painting of equipment

Switchyard maintenance

- GSU maintenance
- Drawing oil samples, interpreting and performing test results
- All Doble/power factor and excitation testing
- All breakers, switches and line maintenance on the plant side of the GSU
- Cleaning up oil spills

Supervision, technical and non-project engineering support

- Supervision

Function Definitions

- All technical and engineering support related to maintenance

Costs

Nonlabor costs include:

- All replacement parts
- Materials used to support the above activities, including consumables
- Outside labs, analysis or leased equipment
- Clothing and safety apparel
- Equipment

Important Notes

1. Include scheduled and unscheduled maintenance charged to general maintenance accounts **BUT** specifically **EXCLUDE** the following:
 - Maintenance associated with projects that was charged to a specific project charge number that was distinct from general blanket accounts **AND**
 - Maintenance associated with major overhaul work (i.e., a major overhaul is a significant reconditioning of the units designed to return them to their “like new” condition. A major overhaul typically lasts 12 weeks or longer and occurs at cycles longer than 10 years).

Account for this maintenance work under Investment.

2. **INCLUDE** maintenance accomplished during an outage.
3. Account for maintenance upstream of the headgate or final under Waterway and Dam Maintenance.
4. Account for all maintenance of the switchyard on the high side of the GSU under Functions Not Benchmarked.
5. Account for fleet costs under On-Site Support or Off-Site Support.
6. Account for all maintenance of buildings and structures under Buildings and Grounds Maintenance.
7. Account for all maintenance of parks, recreational facilities, fish hatcheries, etc., under Public Affairs & Regulatory.

Waterways and Dams Maintenance

Definition	All activities associated with maintenance of the waterways, dams and penstocks upstream of the headgate or final valve.
Scope	All activities listed below, whether performed by company personnel or contractors, operations, maintenance, or support personnel, irrespective of whether these personnel are part of the station's budget.
Activities	<p>Activities include:</p> <p>Dam maintenance</p> <ul style="list-style-type: none">• Work required to comply with FERC dam safety requirements• Dam instrumentation maintenance• All civil, structural and environmental repairs to the dam and waterway• Dike mowing <p>Waterway maintenance</p> <ul style="list-style-type: none">• Installation and maintenance of signs, booms, buoys• Gate maintenance• Diagnostic testing• Penstock maintenance• Cleaning trash racks and intake valves• Dike, waterway and penstock inspection, leak repair etc.• Forebay maintenance• Sluice gate maintenance• Intake and waterway inspections• Underwater inspections <p>Supervision, technical and non-project engineering support</p> <ul style="list-style-type: none">• Supervision• All technical and engineering support related to WW&D maintenance
Costs	<p>Nonlabor costs include:</p> <ul style="list-style-type: none">• All replacement parts• Materials used to support the above activities, including consumables• Outside labs, analysis or leased equipment• Clothing and safety apparel• Equipment

Important Notes

1. Include scheduled and unscheduled maintenance charged to general maintenance accounts BUT specifically EXCLUDE the following:
 - Maintenance associated with a project that was charged to a specific project charge number. Account for this maintenance work under Investment.
2. Account for maintenance on the plant side of the headgate or final valve under Station Maintenance.
3. Account for fleet and boat costs under On-Site Support or Off-Site Support.
4. Account for ice breaking under Operations.

Buildings and Grounds Maintenance

Definition	Include all activities associated with maintenance of buildings, facilities and grounds.
Scope	All activities listed below, whether performed by company personnel or contractors, operations, maintenance, or support personnel, irrespective of whether these personnel are part of the station's budget.
Activities	<p>Activities include:</p> <ul style="list-style-type: none">• General station housekeeping not related to generation or control systems• Buildings maintenance (painting, repairs, roof leaks, etc.)• Elevator, drainage, and fire suppression maintenance• Domestic water system and waste water treatment system maintenance• Landscaping of grounds <u>EXCEPT</u> dike mowing• Cleaning and trash removal• Snow removal• Road maintenance• All supervision and engineering support related to this Buildings & Grounds Maintenance
Costs	<p>Nonlabor costs include:</p> <ul style="list-style-type: none">• All replacement parts• Materials used to support the above activities, including consumables• Outside labs, analysis or leased equipment• Clothing and safety apparel• Equipment

Important Notes

1. Include scheduled and unscheduled maintenance charged to general maintenance accounts BUT specifically EXCLUDE the following:
 - Maintenance associated with a project that was charged to a specific project charge number. Account for this maintenance work under Investment.
2. Account for fleet costs under On-Site Support or Off-Site Support.
3. Account for all maintenance associated with parks and recreational facilities under Public Affairs and Regulatory.

Investment

Definition Projects qualify as investment projects if at least one of the items listed under Project Purpose applies **AND** the projects can be classified as one of the two Project Types listed below. Work which does not meet the Project Purpose and Project Type criteria should be identified as Station Maintenance, Waterways & Dams Maintenance, Buildings & Grounds Maintenance or Public Affairs and Regulatory, as appropriate.

Project Purpose

All projects undertaken to:

- Restore a facility to its original design or operating and maintenance characteristics, OR
- Provide additional capacity, OR
- Improve operating and maintenance characteristics, OR
- Create new fish, environmental, recreational or visitor facilities, OR
- Dealing with new regulatory or relicensing issues that require physical additions to the plant

Project Type

All projects where:

- Work was charged as a specific project account distinct from general blanket accounts **AND**
- Work was maintenance related and was associated with major overhaul work (i.e., a major overhaul is a significant reconditioning of the units designed to return them to their “like new” condition. A major overhaul typically lasts 12 weeks or longer and occurs at cycles longer than 10 years).

Scope All activities associated with projects, whether performed by company personnel or contractors, operations, maintenance or support personnel **AND** whose activities are charged to the project.

Illustrative Projects

Generating Equipment

- Transformer replacement (replacement of like for like)
- Major overhauls which restore diminished capacity
- Overhaul generator components
- Breaker replacement
- Overhaul turbine components
- Large scale piping replacement
- Transformer upgrade
- Headgate upgrade
- Runner upgrade

Function Definitions

- Upgrade exciters
- Governor upgrade
- Frequency upgrade

Control Systems

- Replace relays panel with solid state relaying
- Replace voltage regulators and relays
- SCADA upgrade
- Station service metering upgrade
- Protection upgrade
- Station automation
- Sequence of events recorder

Waterways and Dams

- Hydraulic pump replacement
- Sluice gate or trash gate replacement
- Penstock replacement
- Replacement/refurbishment of concrete (dams, headwork, intake)
- Replacement of major equipment
- Capacity expansion of penstock
- Gate upgrade
- Hydraulic pump system upgrade

Buildings and Grounds (includes non-technical equipment and facilities in the plant)

- Crane overhaul/replacement
- Roof replacement
- Powerhouse concrete refurbishment
- Crane upgrade
- Upgrade site drainage
- Install new cold storage building
- Add new office wing
- Expansion/upgrade of access roads
- Upgrade entire fire protection system

Public Affairs & Regulatory

- Parks and recreational facility construction
- Fish hatchery construction
- Visitor center construction
- Fish ladder construction

Function Definitions

Important Notes

1. EXCLUDE scheduled and unscheduled maintenance that is charged to general maintenance accounts. Account for this cost under Station Maintenance.
2. Do not account for projects in the switchyard or transmission system beyond the high side of the GSU or the high side of the GSU breakers.

On-Site Support

Definition	All activities associated with support services that are located at the plant.
Scope	All activities listed below, whether performed by company personnel or contractors.
Activities	<p>Human resources</p> <ul style="list-style-type: none">• Compensation administration• Benefit administration• Labor relations• Employment and employee programs <p>Fleet services</p> <ul style="list-style-type: none">• Management and utilization of on-site vehicles• Operating and maintenance costs for all on-site vehicles• Boat operating and maintenance costs• Mobile tool and work equipment management <p>Information services</p> <ul style="list-style-type: none">• Major systems design• Applications development• Data communications• Mainframe operations• Data security• Disaster recovery• Network management and administration• Management of computer hardware and software <p>Security</p> <ul style="list-style-type: none">• Personnel access and control• Vehicle access and control• Security systems management• Employee background checks <p>Purchasing</p> <ul style="list-style-type: none">• Vendor management• General and technical purchase management• Materials expediting• Commercial terms management• Claims

Function Definitions

Materials and stores

- Station materials management not in support of station maintenance
- Inventory management
- Coordination with central warehouse and company materials management system

Safety management

- Maintain and create safety programs
- Monitor and control site safety conditions
- Track safety performance

Budgeting and accounting

- Coordinate and assist in preparing budgets
- Provide budget variance and status information
- ☐ Serve as primary interface with company budget information services

Training

- ☐ Conduct non-technical company training programs
- ☐ Track employee training participation

Other administrative services

- ☐ Other support services not specifically identified above

Costs

Nonlabor costs include:

- ☐ Operating and maintenance costs for all on-site vehicles
- ☐ Materials and supplies

Important Notes

1. EXCLUDE all engineering charges. For the purposes of this program, engineering is not considered an On-Site or Off-Site Support service. Engineering is captured in the other functions -- all engineering personnel and contractors should be allocated to the function it serves (i.e., operations, station maintenance, waterways & dams, buildings & grounds, investment etc.).
2. Account for services that are provided by off-site resources under Off-Site Support.

Off-Site Support

Definition All activities associated with support services provided by personnel who are not based at the station. There are two types of Off-Site Support services:

- Off-Site Support - Direct Bill: For this type of support service, the stations are directly billed for a portion or all of the salaries of the support staff that provides services to the station.
- Off-Site Support - ALLOCATED: Stations are not directly billed for the salaries of support services staff. The stations are, however, indirectly billed for these support services through a corporate accounting allocation process, resulting in an “overhead” support cost that the station must ultimately bear. Usually in this situation, the stations have little control over the support services provided or over how these costs are allocated to the station level.

Scope All activities listed below, whether performed by company personnel or contractors.

Activities Human resources

- ☐ Compensation administration
- ☐ Benefit administration
- ☐ Labor relations
- ☐ Employment and employee programs

Fleet services

- ☐ Management and utilization of off-site vehicles
- ☐ Operating and maintenance costs for all off-site vehicles
- ☐ Mobile tool and work equipment management

Information services

- ☐ Major systems design
- ☐ Applications development
- ☐ Data communications
- ☐ Mainframe operations
- ☐ Data security
- ☐ Disaster recovery
- Network management and administration
- Management of computer hardware and software

Security

- Personnel access and control
- Vehicle access and control
- Security systems management
- Employee background checks

Function Definitions

Purchasing

- Vendor management
- General and technical purchase management
- Materials expediting
- Commercial terms management
- Claims

Materials and stores

- Station materials management
- Inventory management
- Coordination with central warehouse and company materials management system

Safety staff

- Maintain and create safety programs
- Monitor and control site safety conditions
- Track safety performance

Budgeting and accounting

- Coordinate and assist in preparing budgets
- Provide budget variance and status information
- Cash disbursements and cash receipts

Training staff

- Conduct non-technical company training programs
- Track employee training participation

Legal

- Litigation support
- Disputed claims support

Other administrative services

- Other support services not specifically identified above

Corporate Management

- Corporate management staff costs

Corporate Office Staff/Services

- Corporate office staff costs
- Corporate services costs

Function Definitions

Corporate Facilities

- Costs related to the ongoing support of corporate facilities

Costs

Nonlabor costs include:

- Operating and maintenance costs for all off-site vehicles
- Materials and supplies

Important Notes

1. **EXCLUDE all engineering charges.** For the purposes of this program, engineering is not considered an On-Site or Off-Site Support service. Engineering is captured in the other functions -- all engineering personnel and contractors should be allocated to the function it serves (i.e., operations, station maintenance, waterways & dams, buildings & grounds, investment etc.).
2. Account for services that on-site resources provide, and for which the corresponding cost for these services is directly billed to the station, under On-Site Support.

Public Affairs and Regulatory

Definition	All activities associated with managing regulatory, environmental, and community issues as well as those activities that are required to maintain the franchise to use the water.
Scope	All activities listed below, whether performed by company personnel or contractors, operations, maintenance, or support personnel, irrespective of whether these personnel are part of the station's budget.
Activities	Activities include: <ul style="list-style-type: none">• Relicensing• Public relations• Operations and maintenance of visitors centers• Operation and maintenance of parks and recreational facilities• Real estate management, including leases and other community relations• Navigation services support• Operation of fish hatcheries• Fish and game issues• Buildings and grounds maintenance associated with parks and recreational facilities
Costs	Nonlabor costs include: <ul style="list-style-type: none">• All replacement parts• Materials used to support the above activities, including consumables• Outside labs, analysis or leased equipment• Clothing and safety apparel• Equipment

Important Notes

1. Include scheduled and unscheduled maintenance charged to general maintenance accounts for PA&R facilities (visitor's centers, recreational facilities, etc.) BUT specifically EXCLUDE the following:
 - New construction charges associated with PA&R projects that was charged to a specific project charge number (i.e., new visitors center, fish ladder, etc.). Account for this work under Investment.
2. Account for fleet costs under On-Site or Off-Site Support.

Functions Not Benchmarked

Definition	Activities which may be performed by the organizations being benchmarked but are not within the scope of the study.
Scope	<u>Only</u> those activities listed below qualify as “Functions Not Benchmarked.” All other activities need to be accounted for in one of the other benchmarked functions.
Activities	Activities include: <ul style="list-style-type: none">• Transmission line maintenance, construction or switching• Switchyard maintenance past the high side of the GSU or GSU breaker• Switchyard relaying other than the sudden pressure relay or differential scheme on the transformer• Distance protection, transmission line communications, and overcurrent schemes• Fossil support or employees loaned to fossil plants• Switching in the switchyard except to obtain station clearance• System operations• Customer service, distribution, demand side management• Projects pertaining to the switchyard or transmission on the high side of the GSU• Shop and stores support of non-benchmarked activities