



National Association of Regulatory Utility Commissioners

# Investment Monitoring and Regulatory Audit

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#### **Electronic database of assets**

Continuing Property Records (CPRs)

Each regulated utility should maintain records which show the original cost of plant and it's current location

CPR system is a procedure by which the costs of utility plant are segregated and maintained by units of property

A unit of property is an item which can be readily identified and accounted for by itself.





# CPR's

- Two types of property units
  - Identifiable units such as land, buildings for which a record showing location and original cost of each item is maintained. Any new location is also maintained.
  - Group units such as meters, poles which are recorded in total cost and at average costs.
    - Recorded by vintage year in the control CPR.
    - Further maintained by sub-division records as to location and size with details from the work orders completed during the year.
    - Total quantities, total cost and average cost per unit should be recorded on the control CPR at year end. In other words during the year the sub-division record is maintained then all is recorded in the control record at year end.





- Record if the Unit of property is not part of a larger retirement unit
- Life is greater than one year (if less, then expense)
- Smallest item for replacement
- Amount or cost level, to be determined by management but usually costly especially when made up with other items.
- FERC says No altering of retirement units to manage the "bottom line" or shareholder earnings.





- Minor items of property that make up a unit
  - Example: cross-arms on a pole and insulators on a pole
  - Capitalized during initial unitization on work order
  - Replacement of minor items are treated as an expense
  - Except if very costly for large quantity of small items (see below)
  - Betterment items can be capitalized, depends on utility history.
  - Some minor units can be capitalized on limited conditions and subject to management. (see 150 miles of transmission line and need new guy wires.





# **CPRs minor units of property**

- Minor items
  - There is a lot of chances for manipulation. Need controls
  - Allowing minor item replacement to be capitalized is not universal, or a requirement of any US regulatory body known by the Michigan Commission.
  - Based on good reasoning, reasonableness of cost and the utilities history.





#### **CPRs minor units/example**







# **CPRs minor units/example**

- CPR record unit = One building complete with location and cost accumulation.
- Retirement unit = The elevator in the building
- Minor units = put together to produce the elevator
- Minor units = Replacing the windows
- Think of anything else?





# **CPRs Mass property**

- Thousands of similar retirement units such as meters, services, poles, cable. (remember the need to be located in CPRs)
- Mass property is recorded in the plant in service accounts by vintage years (year purchased).
- These retirement mass property units must be tracked by vintage year (important for depreciation)
- Alternative ways to determine the vintage is by firstin-first out, weighted average, survivor cures (like IOWA curves used in depreciation studies).





# **CPR** information for property

- Specific description of property- make, model, size, vendor, serial number, purchase order number, invoice number from vendor. (history of vendor might be useful when parts start falling apart)
- Quantity placed in service by vintage year. Most is placed into service even though it can be held in a warehouse. It is ready to work like meters, poles.
- The average cost
- The plant account number to which the costs are charged, also the work order should be present.





#### **CPRs mass property- simple example**

Account #XXX. Poles

(1)	(2)	(3)	(4)	(5)
Units of		Total	Unit	Total
Property	Unit	Units	Price	Value
20' poles	each	2,986	\$10.20	\$30,457.20
30' poles				

35' poles

This record supported by a sub record that included the location. This record would be many, many pages but possible with modern computer programs.

When a physical inventory is taken and the number is changed...the 2,986 are now 2,750 but the dollar amount is still on the books. Adjustment is required!





- Macro or Micro retirement units?
  - Always a management call but reasonable for regulatory purposes.
  - Should a computer keyboard be a retirement unit? If smaller retirement units are recognized as units of property then maintenance expense should decrease. Something for management to consider.
  - BUT may increase property taxed, and increase transaction recordkeeping costs. More work to record to CPRs rather than to just expense out.
  - Lots to be considered by management (with a little help from your friendly regulators if needed).





- Should be arranged in conformity with the plant accounts prescribed in the Uniform System of Accounts.
- These records are important and useful because they provide a complete record by plant accounts of the number of each type of property unit that makes up Plant in Service and its unit cost.
- Also useful at the time a unit of property is retired (or sold).
- These records are necessary for depreciation recognition and depreciation studies.





# **CPRs** objectives

- Provide for inventory of property, which can be spotchecked for physical proof of existence.
- Record of costs associated with property so as to assure accurate accounting for retirements
- Groups such as Transmission and Distribution mass property (Gas-Mains)(electric-poles & cable) will be subdivided by size, recorded in total quantities and average cost per unit or average cost of size or vintage.
- Supply details of costs of properties, depreciation written-off in given year, amounts in reserves and the net book values of properties. 14





# **Original cost**

- Consider original cost which is a basic concept underlying plant accounting requirements. It is the cost incurred by the person who first devoted the property to public utility service and must be just and reasonable.
- If plant is purchased by a utility from another utility it still maintains the original cost at the time it went into utility service (the first time it went into service, not into the purchasing utilities service). Differences are acquisition costs and with approval are amortized.





# Originial cost by layers

- All types of cost should be understandable on CPR
- AFUDC if it meets the criteria (work order construction lasting over 6 months, cost over \$50,000).
- Indirect labor and Administrative and General loadings
- Direct labor and equipment
- Identifiable material, unidentifiable material (guess maybe glue? The helper items used during construction. What about caulking?).





#### Work order system

- Work order system is essential. It is the document that accumulates all cost that go into the construction or purchase of utility property.
- Same work order system is used when property is retired(Retirement work order system).
- A work order system must show the nature of each addition to or retirement of electric plant and the total cost and sources of each cost (invoices, direct company costs like labor and allocations of overheads)





## Work orders

- Costs should be accumulated by work order and the total of the balances in each uncompleted work order should be recorded in Account 107-Construction Work in Progress if work is not completed at the end of the month or at the end of the year.
- Overhead loadings, such as engineering and supervision, office salaries and expenses and other items which can not be charged directly should be allocated to work order by some equitable basis.





# **Work Orders**

- Allowance for Funds Used during Constructions (AFUDC) is a cost to be added to construction if construction meets certain criteria. MPSC U-5281
- AFUDC is a cost if the construction period is over 6 month in duration and over \$50,000. No AFUDC for pollution control construction.
- AFUDC or interest on debt or the use of equity for the cost of money used for construction.





# Work orders

- Work orders should be closed and transferred to plant in service as soon as practicable after the work is completed.
- Retirement work orders should be closed as soon as practicable and amounts accumulated should be removed from plant in service (along with corresponding depreciation reserve).
- Retirement work orders stress the importance of good Continuing Property Records for the original cost of plant needs to be removed from books as the work order for retirement is closed out.





- Must be a retirement unit
- Record of the life of an asset and used in depreciation studies (Iowa curves examine life patterns).
- Have been recorded in a work order
- Have the following parts.
  - Old installed cost or the original cost when it went into service
  - Known cost to remove
  - There must have been some salvage value build into the depreciation rate. There usually is a cost to remove.





- Not a matter of just removing the original cost plus any additions.
- Cost of removal such as labor, equipment, outside work force, overheads are all items to consider when removing plant.
- Estimated salvage value of removed plant? Any monies received for salvage should lower the cost.
- If need to pay to remove salvage then cost is added to retirement.





- Salvage value should be a component of depreciation rates so that the credit received is off set by the salvage value build into the accumulated depreciation reserve. Should be/could be a wash.
- Salvage not income. What does a lot of salvage value mean when plant is retired? The depreciation rate component was off on estimate. Or scrap value has increased.
- Also if the salvage value was too low...it's a catch up expense for the rate payers.





- Old cost is removed via journal entry with
  - Debit to accumulated depreciation (108)
  - Credit to Electric Plant in Service (101 and sub account in 300s).
- Salvage and cost of removal remain in the accumulated depreciation account and serve to adjust future depreciation rates up or down as appropriate. No gain or loss is recognized just carried forward to future periods.





- Other concerns
  - When original cost records have not been maintained are there procedures to use to arrive at an estimate of original cost? Good engineering guess work?
  - Are estimating accumulated depreciation associated with retirement or even sale of plant reasonable?
  - Depreciation reserves are not always sub divided into type of plant, etc.
  - Theory is that plant, when retired, is full depreciation. So remove amount from plant in service and same amount to be removed from depreciation reserve.





# What?

- Yes, in theory the removal of plant could very well deplete the depreciation reserve account more than just original cost if retired before expected life.
- Depreciation rates are designed to consider all that might be associated with the retirement of plant. Can only be adjusted during depreciation rate case.
- Remember what goes into the retirement work order.
- Consider the removal of production plant. There is always a component that considers putting land back to nature if there is not going to be replacement.





# What?

- Consider a retirement work order to remove a coal plant. There might be a component built into rates that allows for reclamation back to the natural state before the plant was build. (see this with Nuclear plts)
- Example: A coal plant retired in Michigan: Utility had to dig up lots of land to remove all the remains of coal piles that had worked its way well below surface.
- Can be very costly especially if a Nuclear plant. Rate payers pay for these cost, so good records are important.





# **Using CPRs for auditing**

- Assets that form the productive capacity for a utility are often referred to as property, plant and equipment or fixed assets.
- Fixed assets represent a significant percentage of the total assets of an organization. Monopolistic = utility!
- Auditors want to see if assets are protected, accounted for properly, and an adequate internal control system is evident.





# **Using CPRs for auditing**

- As in the review of any asset, one of the objectives is to determine if property, plant and equipment are in existence
- Auditor needs summary of Fixed-Asset changes. Utility supplies summary for auditor.
- Assurance that separate authorization responsibility, recording responsibility and custodial responsibility is adequate.
- Sound like this ties to the Procurement audit? Yes!





# **Using CPRs for auditing**

- From CPRs identification of plant and its location an audit can verify or have proof that in fact the property does exist. Get in car and check it out!
- Work order ## that accumulated cost should be noted in CPRs and provided to auditor upon request.
- Additions are supported by third party invoices and should be documented in work order.
- The cost of retiring property could also be supported by third party invoices/billings that are so noted in Work order.





# **Problems with CPRs**

- Only as good as the recording and maintenance of records. Good policies/procedures/management!
- Management must feel it is important to have good, accurate records.
- What can a Regulatory Commission do? Stress during a depreciation rate case that there is doubt as to the value of plant in service because there are not good records for proof of existence.
- Single issue case to require utility to provide a good Continuing Property record system happens.





#### Use of CPRs and work orders

- As can be seen the work order system works hand and hand with the Continuing Property records.
- Can't stress how important good controls over both systems are to management and the regulator.
- Good controls are management responsibility and start with good polices and procedure descriptions.
- CPRs, along with a good work order system, is the back bone and support of the plant assets of a utility.





#### Use of CPRs and work orders

- Have all the information when plant goes out in a storm. Identifies, has costs, etc.
- Management can analyze cost, compare to replacement costs.
- Analysis for a systematic replacement based on vintage. Old, rotten poles or other old property can be scheduled for a systematic replacement when management prepares it yearly budget.





- Sounds expensive to set up CPRs. Yes and it is! But so worth the expense.
- Support plant balances for:
  - Rate payers
  - Shareholders
  - Tax department appreciates for property taxes information, etc
  - Audit, external and internal, love them
  - Good for rate cases and depreciation studies.
  - For management planning and for plant studies





- FERC (Federal Electric Regulatory Commission which is comparable to the Georgian Commission being at the national level) approves amortization of general plant. What is general plant.. in Uniform System of Accounts and Michigan Commission agrees. Plant that is used by many parts of a utility. Accounts #389-399 (building, computer programs)
- FERC and Michigan Commission allow companies to use estimates to identify cost of retired property (the old stuff) but would like continuing property records better.





- FERC and the Michigan Commission allow estimates for retirements if there is no record of original cost.
- AFUDC is allowed by both FERC and the Michigan Commission.
- AFUDC stops when the property is placed into service or construction has been completed and are ready for service and it stops when there are long periods of interrupted construction (delays). The utility shareholders gets the costs on this one.





- Costly and time consuming
- First step is the inventory of property units. At time of completing construction all units of property are determined and recorded.
- Any property units of existing plant not included in inventory can be counted by plant personnel and unit cost determined from invoices on file, other records and documents or estimates.





- The units of property should conform to retirement units shown in the system of accounts for plant as prescribed by FERC.
- After all property units have been established and costs determined from final inventory documents of new plant and the inventory of units of existing plant, the next step is the computation of the units and unit value.
- The units and unit value are posted from final inventory documents and the count of existing plant.





- Computing total value and then compare to book value (the amount already on the books). New unit price might be discovered. Adjustment necessary?
- Should control over assets be investigated if there is large recurring differences?
- A new book value being placed on the books should be given careful consideration, especially from a tax viewpoint. Both property and income taxes may be effected.





- There are many computer programs available that set up and maintain CPR's but taking the physical inventory can be expensive and labor intensive if there are no minimum property records or document even marginally in existence.
- Once established CPRs must be maintained and reviewed with a critical approach.
- The CPS system can be expanded and refined in accordance with the growth and requirements of a company.





- Larger companies need to age their records which included the year of installation on the theory that in retiring property the actual age of the unit is known. This is useful for future management decisions.
- The more the refinement involves considerable additional paper work, expense and difficulty in identifying units of property as well as locations.
- Opinions vary, but there are some that believe that the method of pricing units of outside plant is on the average unit cost basis.





- AGAIN it is stressed: When a CPR has been established, the quantities of units of property as stated should agree with the quantities of units of property actually in service. Such numbers, multiplied by unit value should equal the values for plant in service accounts in the general ledger.
- The primary objective of a CPR is to maintain a record of the units of property that are actually in service and the costs/value is reflected on the books and is part of the value of a utility.





- If the CPR is correctly maintained and likewise the plant account costs are properly reflected in the general ledger, then the system must and will function property.
- Can one see how these records could be helpful during an emergency? And back to procurement procedures during emergencies.
- It all ties together but it's like a ball of string. Keep unwinding the pieces.





#### **Review outline**

- Accounting Department
  - Maintenance of detailed plant ledger
  - Maintenance of the general ledger
  - Review of asset purchase authorization and execution
  - Review of asset disposition, authorization and execution
  - Control and responsibility for the periodic counting of fixed assets which includes physical identification.
  - Establishment and administration of depreciation policies





#### **Review outline**

- Treasurer
  - Signing of checks for fixed assets purchased
  - Custody control over cash received from fixed assets sold
  - Procedures and authorization for all steps in payment processes





#### **Review outline**

- Functions other than accounting and treasurer
  - Responsibility for the purchase and sale of fixed assets (various departments/divisions/locations)
  - Responsibility for the approval of fixed-asset sales (board of directors or a designated committee)
  - Assessment to build or buy and risk analysis (see earlier discussion).
  - Custodial responsibility for items acquired (various as seen above).





#### **Internal Control Questionnaire**

<u> </u>	operty, Plant and Equipment	Yes/No	Inquiry	Observation	<b>Comments</b>
•	Is prior authorization for capital				
	expenditures required?				
•	When actual capital expenditures				
	exceed amount approved, is this				
	excess properly approved?				
•	Is there a consistent policy for				
	identifying capital and revenue				
	expenditures?				
•	Is there a detailed plant ledger kept?				
•	On a periodic basis, is an inventory				
	of plant assets taken?				
•	Are the recording of and the accounting				
	for capital replacements, betterments,				
	and extraordinary repairs designed to				
	ensure proper accounting treatment?				
•	Is there a proper system for the retirement	nt			
	and disposal of fixed assets sets? Policie	s?			





# **Summary of Changes**

#### Procedures

- Obtain and audit an analysis of changes in asset accounts during the year.
- Inspect fixed-asset additions for the year and consider extending this procedure to all major items on hand at end of year.
- Vouch fixed-asset additions
- Test fixed-asset disposals and retirement and search for unrecorded transactions
- Obtain and review an analysis of the repair and maintenance expense accounts

#### date completed work performed by





#### **Summary continues**

#### **Procedures**

#### date completed work performed by

- Obtain an analysis of changes in the accumulated depreciation accounts during the year.
- Test depreciation computations
- Determine if a proper cutoff of fixed-assets transactions was made.
- Review fixed-asset accounts and related accounts for proper classification and disclosure.





#### Analysis of property, plant and equipment

	Туре	/ Beg. Balance/	additions / retirements / Ending balance	<u>comments</u>
•	Land			
•	Buildings			
•	Generation			
•	Transmission			
•	Distribution			
•	Machinery			
•	Office Equipmer	nt		
•	Delivery Equipm	ent		

- Etc.
- Etc.

#### The same schedule for Accumulated Depreciation Account.

Purpose is to analysis additions and retirements of fixed assets.





# Topics for consideration. All relate to assets or could relate to Utility assets.

- Purchase orders
- Work orders
- **Construction Work in Progress**
- Accounting for property
- Units of Property
- Retirements
- Obsolete property..is the buggy whip still in inventory?
- Oh the yearly budget! Another topic, but so important.





#### **Budgets, Policies and Procedures**

- The backbone of management. It gives direction to reaching the goals of the utility.
- What comes first? The chicken or the egg?
- Need manual of accounting policies and procedures
- Need manual giving direction for all daily activities and emergency actions. Written directions for the "what ifs".
- Employees should not have to guess what to do or how to function. Management gives them guidelines.





#### More budgets/policies and procedures

- The procedures should be stated clearly, most are on the company intranet (electronic data base) and each employee should have written procedures for his position function.
- If procedures are clearly sated, the policies set by management can be enforced efficiently and consistently. Management should review and revise as patterns in operation change.
- Procedures allow for uniform handling of transaction for reliable record keeping.





#### More budgets/policies and procedures

- Procedures are known to all employees.
- Established methods of initiating, recording and summarizing transaction or actions for that matter.
- Procedures for emergencies is very important!
- Procedures or guideline protect from serious errors, miss-statements and serious outcomes for employees and the utility.
- Procedures lead to good accounting and allow for a good "check and balance" control.





#### **Budgets**

- Operating and financial plan for future periods.
- Can be for general operations
- Can be for future requirements. Example: Old production plant nearing its expected life end.
  Planning for replacing, after analysis of options gives direction to management for future expectations and requirements.
- Plant and equipment Budget consists of estimates of amounts required for new construction, equipment along with maintenance of present assets.





#### Budgets

- Management develops given the expected needs, expected revenues, expected growth of their system.
- Other budgets on a yearly basis (with revisions) are:
  - Cash, Sales, Material, Financing requirements, Labor requirements, and the list goes on and on.
  - Budgets start at top, go to bottom and work back up before budgets are completed.
  - Management determines what needs to be done and the cost. Going the lowest level such as Lineman where their needs are determined. This fits into next level up and up and up. Until the top determines that those needs are ok.





#### **Budgets**

- So the proposed budgets working for the bottom up are determined to be too costly. Message it out to cut 10%. So back down the chain and the lowest level budget is revised to fit into the master budget.
- This is only an operation budget. There are many, many budgets necessary to arrive at a master management budget for the year.
- Then there are the budgets for future "wants, needs and desires" that have to be recognized into the current planning.





#### **Budgets as auditor tool**

- It can be seen what role the budget takes in the operation of a utility and why Auditors review budgets along with policies and procedures.
- The monthly review of a budget and operating report, should show the budget compared to the actual experience. Any variance should be explained to management (and auditor reviews).
- All this budget analysis fall right back to yesterdays procurement reviews.





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## **QUESTIONS?**