CHAPTER 10

PROPERTY, PLANT, AND EQUIPMENT

1. INTRODUCTION.

a. Background/Authorities. This chapter describes financial controls over the acquisition, use, and retirement of property and provides guidelines for distinguishing between charges to capital accounts and charges to expense accounts consistent with the Statement of Federal Financial Accounting Standards (SFFAS).

b. Applicability. The applicability of this chapter is specified in Chapter 1, "Accounting Overview." When in conflict with the provisions of this paragraph, power marketing administrations (PMAs) should observe the policies of the Federal Energy Regulatory Commission and other industry standards as they apply to the accounting and financial management of property, plant, and equipment (PP&E).

c. Policy/Objectives. Financial accounting for PP&E should be governed by the following basic principles:

(1) Department of Energy (DOE) property should be accounted for and reflected in the official DOE financial records in accordance with the capitalization criteria contained in this chapter, regardless of funding source;

(2) Depreciation should be calculated and recorded in the appropriate cost-of-operation account, using the appropriate fund type;

(3) Timely and accurate financial reporting on facility construction and capital equipment activities should be provided to DOE management;

(4) Financial control over property should be maintained;

(5) The primary basis of accounting for property is its acquisition cost (with the general exceptions of transfers, excess property received, foreclosures, and discoveries); and

(6) Common-use temporary construction facilities and equipment should be budgeted for by the Landlord Program without chargeback to the benefiting construction projects

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d. Capitalization Criteria.

(1) Capitalize individual PP&E items that are purchased, constructed, or fabricated in-house, including major modifications or improvements to any of these items, if they have an anticipated service life of 2 years or more and if they cost $50,000 or more, regardless of funding sources. The only exceptions are items that are inherently experimental, used as special tools, or, by nature of their association with a particular scientific experiment, not expected to have an extended useful service life or an alternative future use. Notwithstanding the accounting threshold for physical accountability/control purposes, personal property records are required for items of personal property with an acquisition cost of $5,000 or more. Data about real property, regardless of value, should be retained in the Facility Information Management System (FIMS) required per Title 41 CFR 101-47.201.2.

(a) Purchased Assets. Generally, costs should be recorded net of purchase discounts taken. Purchase discounts lost and late-payment penalties should not be included as costs of assets, but should be written off as an operating expense. Capitalized cost includes all costs to convert or to make the facilities or equipment ready for use, for example, invoice price, transportation, and installation costs. As a general rule, indirect costs associated with the purchase of the item are not capitalized.

(b) Constructed Assets. When an entity constructs a depreciable asset for its own use, all direct costs are included in the total cost of the asset. Constructed capital assets must receive their allocable share of all indirect costs (CAS 404).

(c) Purchased Asset Improvements. When the expenditures that increase the capacity or operating efficiency or extend the useful life of an asset are substantial, expenditures are capitalized. Capitalized cost includes all costs to convert or to make the facilities or equipment ready for use, for example, invoice price, transportation, and installation costs. Minor expenditures usually are treated as period costs even though they may have the characteristics of capital expenditures.

(2) Capitalize automated data processing software (programs, routines, or subroutines) valued at $50,000 or more and with a useful life of at least 2 years. This criterion is only applicable to the operating

system, or that software necessary for the computer to operate and process other applications software. Software for any operation in addition to the basic operation of the computer should be expensed, even if purchased with the computer.

(3) Capitalize and group in a separate asset-type account related items that individually cost less than $50,000 but that collectively cost $50,000 or more, such as the initial complement of equipment (for example, office equipment) for a building, if current costs would be distorted in a given period by charging such items to expense accounts. The initial complement of equipment of insignificant value relative to total project cost is generally distributed over the cost of the property record units to which it is related.

(4) Capitalize property, including assets acquired through installment contracts and lease purchases, as described in this chapter.

(5) Generally, DOE elements should not capitalize interest during the acquisition of PP&E. However, certain DOE elements fund the acquisition, construction, or fabrication of PP&E through direct borrowing from the Department of the Treasury (Treasury) and pay interest directly to Treasury. In such cases, capitalize interest, if it is material, based on the interest rate charged by Treasury for the funds borrowed. The interest capitalization begins with the first expenditure for the qualifying asset and ends when the asset is substantially complete and ready for its intended use. Capitalize interest costs as long as the following general conditions are met:

(a) Expenditures for PP&E have been made, and

(b) Activities that are necessary to get PP&E ready for its intended use are in progress.

e. Property Record Unit Concept.

(1) Property record units are designed to establish divisions of the completed PP&E categories. Property record units facilitate the recording of changes to property categories and the reconciliation of physical inventories with financial accounts.

(2) A property record unit, sometimes called a PP&E record unit, is a plant or equipment item, for example, a building, selected to be continuously identified in the property records. The selection of property record units determines the manner in which costs are assembled and recorded in the property records. A property record

unit may be composed of one or more retirement units. In selecting the property unit, consideration should be given to its use, relationship with other associated items, relative importance, frequency of anticipated property changes, and monetary value. Generally, $50,000 or more is considered sufficient monetary value to justify maintaining continuing records of the property unit. A property record unit may be a functional unit consisting of an assembly of associated items, some of which are retirement units, such as a hydraulic extrusion press; a facility serving or designed to serve two or more other property record units, such as a control system or piping system; a continuous facility of which sections are retirement units, such as roads, walks, and paved areas; or a unit that is complete in itself, such as a spectrometer.

(3) Retirement units are established for convenience in accounting for the replacements of major components of plant and equipment.

(a) A retirement unit establishes a physical dividing line by which costs of major work related to plant and equipment are capitalized. Costs to extend the life of or replace the retirement unit should be capitalized. All other costs related to the retirement unit should be expensed. A retirement unit is a component of plant and equipment that is capitalized in a separate account and invariably eliminated from the plant and equipment accounts when removed, transferred, sold, abandoned, or demolished.

(b) There should be a close coordination among the budget, accounting, engineering, project management, and technical staffs in the development and maintenance of retirement units. The development of retirement units should take into consideration such factors as use made of the item, retirement history of identical or comparable items, and the monetary and physical relationship of the item to the associated property record unit. Although items identified as retirement units are capitalized in the accounting records, from a budgeting perspective, the substitution of a new retirement unit of essentially the same type and performance capabilities as the replaced retirement unit should be funded out of operating funds. However, the substitution of a new retirement unit having significantly improved and superior performance capabilities beyond those of the replaced retirement unit is considered betterment and should be funded out of capital funds.

(4) Each field element or integrated contractor will develop and maintain its own property record unit catalog or one that may serve all activities reporting to that element. Approval by the head of the field element or a designee is necessary for new catalogs and revisions of sections of existing catalogs. DOE review and approval of property record unit additions and deletions by contractors should be done annually by the cognizant field Chief Financial Officer (field CFO). A property record unit catalog describes the property record units that DOE owns. It provides a basis for a common understanding as to the manner in which PP&E costs are assembled and recorded in the field and contractor PP&E records. The description of each property record unit is intended to provide sufficient information to identify the unit in the PP&E records and for physical inventory purposes. The retirement units applicable to each property record unit provide a basis for distinguishing between capital (PP&E) and expense charges. A property record unit catalog should have the following principal features:

(a) An explanation of the property record units, what they consist of, and the descriptions used and type of asset;

(b) The manner in which the units are to be recorded in the property records, whether as individual items or as a group of similar items;

(c) A list of the retirement units applicable to each property record unit; and

(d) The current Departmental capitalization criteria.

f. Guidelines for Distinguishing Property, Plant, and Equipment Expenditures from Operating Expenditures.

(1) Although operating expenditures and PP&E expenditures are now consolidated under the same appropriation, separate functional classifications are required, and the distinction between operating and PP&E expenditures must be maintained at all levels of procuring, accounting, and reporting.

(2) Consider the following two factors in determining whether an action should be classified as PP&E: the nature of the item to be purchased or constructed and the service life and cost of the item to be purchased or constructed. Budget and procurement procedures should ensure that PP&E procurements are properly matched to

corresponding funding ceilings. The various types of PP&E items may be categorized broadly as follows:

(a) Plant.

1. *Land* includes land rights, depletable resources (minerals and timber), and improvements to land.

2. *Buildings* include all structures, additions, or improvements to structures (but not normal maintenance).

3. *Construction* includes all elements associated with construction in progress.

4. *Utilities* include water and sewage systems; heating, cooling, and power systems; communications systems; and fire prevention systems.

(b) Equipment.

1. Heavy equipment includes all vehicles, railroad stock, processing or manufacturing machinery, shop machinery, reactor or accelerator machinery, and reserve construction machinery.

2. Special and scientific equipment includes medical, laboratory, and security equipment.

3. Automated data processing equipment includes computers, printers, cathode ray tubes, operating system software, and interface peripherals.

(3) The following are examples of costs that are expensed:

(a) Plant.

1. *Land*. Expense normal maintenance and repair, such as periodic vegetation control, repairs to sections of sidewalks, and roads that are less than a retirement unit.

2. *Buildings*. Expense normal maintenance and repair, such as painting, cleaning and small repair jobs not

resulting in an addition, replacement of a retirement unit, or a betterment. Alterations are also expensed.

3. *Construction.* Expense demonstration plants that have limited service lives and that will not be used for actual production or operations.

(b) Equipment.

1. Expense equipment not meeting the capitalization criteria.

2. Expense conceptual design, fabrication, testing, and reworking of prototype equipment subject to redesign as fabrication and testing are performed. This usually applies only to the first unit if several similar units are to be acquired.

3. Expense testing and reworking of prototype equipment for which design has been established.

(4) The appropriate funding source (operating or PP&E) can also be determined by relating funding needs to specific project activities as defined below (detailed description of the services provided can be found in DOE Order 413.3A, "Program and Project Management for the Acquisition of Capital Assets"):

(a) Initiation Phase. During this phase, preconceptual planning activities focus on the Program's strategic goals and objectives. User needs are analyzed for consistency with the Department's strategic plan, Congressional direction, administration initiatives, and political and legal issues. One outcome of the analysis could be a determination that a user need exists that cannot be met through other than material means. This outcome leads to the development and approval of a Mission Need Statement.

(b) Definition Phase. Upon approval of mission need, the project enters the Definition Phase where alternative concepts, based on user requirements, risks, costs, and other constraints, are analyzed to arrive at a recommended alternative. This is accomplished using Systems Engineering and other techniques and tools such as alternatives analysis and Value Management/Value Engineering. This ensures the recommended alternative provides the essential functions and capability at optimum

life cycle cost, consistent with required performance, scope, schedule, cost, security, and environment, safety and health considerations. During this phase, the required Value Management assessment is completed, and more detailed planning is accomplished which further defines required capabilities. The products produced by this planning provide the detail necessary to develop a range of estimates for the project cost and schedule.

(c) Execution Phase. Following the Definition Phase, preliminary design activities mark the beginning of the Execution Phase. Systems Engineering continues to balance requirements, cost, schedule, and other factors to optimize the DOE O 413.3A design, cost, and capabilities that satisfy the mission need. Engineering and design continue until the project has a sufficiently mature design that can be implemented successfully within a firm Performance Baseline. During this phase, the initial design concepts and the preliminary design are developed into detailed and final designs and plans. These plans are used to procure or manufacture components, fabricate subsystems, or construct, remediate, decommission or demolish facilities. Major activities in this phase include:

1. Establishing Performance Measurement Baselines and implementing change control procedures;

2. Satisfying environmental and safety requirements;

3. Obtaining approved National Environmental Policy Act documentation, if required, prior to the start of detail or final design;

4. Continuing to refine and optimize cost estimates, schedules, and designs;

5. Approving the final design for procurement and implementation; and

6. Identifying and addressing security concerns. Execution comprises the longest and most costly phase of a project. Value Management and Value Engineering are implemented throughout the project Execution Phase to ensure the most effective solutions are implemented.

If the delivery method is Design-Build versus Design-Bid-Build and a single contract is awarded for both design and construction, it may be necessary to tailor the project's execution process to allow the project team to propose cost-effective innovative approaches that reduce project duration and cost.

(d) Transition/Closeout Phase. When the project nears completion and has progressed into formal transition and commissioning, which generally includes final testing, inspection, and documentation, the project is prepared for operation, long-term care, or closeout. The nature of the transition and its timing depends on the type of project and the requirements that were identified subsequent to the mission need.

g. Accounting for Repair, Maintenance, Alterations, and Betterments.

(1) **Repair** is the restoration or replacement of a deteriorated item of PP&E, such that it may be utilized for its designated purpose. The cost of repair, which is normally charged to an operating expense account and includes amounts for labor and associated supervision and materials, as well as indirect and other costs incurred in such repairs, may include the costs to replace items of PP&E designated as retirement units. (PMAs should refer to publications and studies on utility plant service lives.)

(2) **Maintenance** is the recurring day-to-day work that is required to maintain and preserve PP&E in a condition suitable for it to be utilized for its designated purpose. It differs from repair in that it is normally worked to correct wear and tear before major repair is required, and it is usually less involved than repair work. Maintenance work is typically also charged to an operating expense account. Preventive maintenance is a specialized category for the broader category of maintenance and is typically charged to an operating expense account.

(3) **Alterations** are adjustments to interior arrangements or other physical characteristics of an existing property record unit so that it may be more effectively adapted to or utilized for its designated purpose. It does not result in a betterment to the property record unit. The following are examples of alterations:

(a) Removal or installation of interior walls for purposes of rearranging the layout of an office building, and incidental heating and ventilation ducting system modifications that do not significantly extend the capacity of the system;

(b) Construction of a door or passage through an interior structural wall; and

(c) Installation of new lighting fixtures that do not significantly increase the lumens emitted but may result in energy or maintenance savings.

(4) **Betterments** are improvements to PP&E that result in better quality, higher capacity, or an extended useful life, or work required to accommodate regulatory and other requirement changes. Betterments are capitalized. Determining when and to what extent an expenditure should be treated as a betterment requires judgment. When a minor item is replaced in each of a number of similar units, the costs, is the proper basis for determining whether or not a betterment is effected. Although a particular project may meet the characteristic of a betterment, if the capitalization criteria are not met or the improvement added is insignificant, then the project should be expensed. Listed below are various terms which are commonly used to describe various categories of betterments:

(a) **Construction** is the erection, installation, or assembly of a new plant facility; the addition, expansion, improvement, or replacement of an existing facility; or the relocation of a facility. Construction includes equipment installed in and made part of the facility and related site preparation; excavation, filling and landscaping, or other land improvements; and the design of the facility. Examples of improvements of an existing facility include the following types of work:

1. Replacing standard walls with fireproof walls;

2. Installing a fire sprinkler system in a space that was previously not protected with a sprinkler system; and

3. Replacing utility system components with significantly larger capacity components (for example, replacing a 200-ton chiller with a 300-ton chiller) and converting the functional purpose of a room (for example, converting an office into a computer room).

(b) **Conversion** is a major structural revision of a facility that changes the functional purpose for which the facility was originally designed or used.

(c) **Replacement** is a complete reconstruction of a plant record unit that has deteriorated or has been damaged beyond the point where its individual parts can be economically repaired. If the item replaced is a retirement unit, its original costs (including installation cost) are removed from the PP&E categories, and the cost of the newly installed item (including installation cost) is added to the PP&E categories.

h. Plant and Equipment Changes.

(1) **Construction Work in Progress.** The Construction Work in Progress account includes costs of additions and retirements of PP&E that is in progress and is being accumulated during the acquisition or construction period. The acquisition cost of construction work in progress should be closed to the completed PP&E categories when the equipment and facilities are placed in service (that is, beneficial occupancy) even if the entire project is not financially completed. The acquisition cost of items being retired should be closed to the appropriate accumulated depreciation account when items are actually disposed of. All costs that relate to PP&E changes in progress and the cost of unconsumed construction materials, supplies, and temporary construction facilities should be included in the account. Detailed accounting records should be maintained for the following (when work is performed under cost-type contracts, the detailed accounting records for each project or job should be further subdivided to facilitate cost control and to make entries to PP&E categories and continuing property records):

(a) Each construction project or job, for example, construction materials and supplies, construction equipment, and temporary facilities, and

(b) Each type of capital equipment.

(2) **Demolition, Dismantling, and Removal Costs and Salvage Credits.** Removal costs should be accounted for as Construction Work in Progress when the removal is in connection with an authorized construction project or an equipment project and when one of the following conditions is met:

(a) Costs are incurred when it is economical to salvage or reuse items;

(b) The removal is necessary for health and safety considerations; or

(c) Contractual agreements require removal.

(3) Abandoned Projects. Project costs should include costs incurred because of the cancellation of all or part of a contract or purchase order to procure, manufacture, or assemble an item of PP&E. These costs, less any salvage credits, should be distributed over the remaining units of property within the project for project accounting purposes, except where such distribution significantly distorts the cost of the remaining property units. Where such distortion occurs, the costs of the abandoned project or project segment may be closed from Construction Work in Progress to Abandoned Projects. All charges to abandoned projects should be approved by the head of the field element.

i. Responsibilities.

(1) Integrated contractors should be required to maintain summary financial control records for their subcontractors having DOE-owned property in their possession, and DOE field elements should do the same for all integrated and offsite nonintegrated contractors for which they are responsible. Property records should facilitate control of the costs of work in progress and should indicate whether an item has been capitalized or not. The summary financial control accounts maintained by DOE field elements and integrated contractors should include as a minimum the reporting code of the organization holding the property, the site code, the type of property (asset type), the acquisition cost, the accumulated depreciation, and the use status code. DOE field elements and integrated and nonintegrated contractors must maintain accurate and up-to-date accounting records to provide the proper accountability for DOE's investment in property. As property is acquired, transferred, retired, or otherwise taken out of service because of loss, consumption, or casualty, documentation should be prepared, retained, and used to support entries into the accounting records, to authorize disposals and transfers, and to explain total or partial losses of property.

(2) Three offices are responsible for establishing DOE policy for property management: the Office of Chief Financial Officer, the Office of Engineering and Construction Management, and the Office of Procurement.

(a) The Chief Financial Officer (CFO) carries out property accounting responsibilities through the Office of Financial Policy, which develops accounting policies and procedures related to appropriated funds and fiscal policies for exercising stewardship over the Department's assets.

(b) The Office of Engineering and Construction Management serves as the Department's official point of contact relating to the acquisition, use, or disposal of real property.

(c) The Office of Procurement is responsible for property management through the promulgation of acquisition regulations and financial assistance rules governing DOE property held by contractors. In addition, the Property Management Division develops and maintains procedures, standards, and guides for property, supply, and equipment management programs; for personal property management; and for the Defense Production Act of 1950 priorities and allocations program.

2. REAL PROPERTY.

a. Definitions.

(1) **Real property** includes land, improvements on the land, or both, and interests therein. The chief characteristics of real property (real estate) are immobility and tangibility. It comprises land and all things of a permanent and substantial nature affixed thereto, whether by nature or by "human hand." By "nature" is meant trees, the products of land, and natural resources; by "human hand," those objects, buildings, fences, or bridges that people erect upon the land. Equipment or fixtures, such as plumbing, electrical, heating, built-in cabinets, and elevators, that are installed in a building in a more or less permanent manner usually are held to be part of the real property. Real property may also include triple-wide trailers or modular units joined together so that the structure is not portable and cannot be relocated without being dismantled and thus losing its identity. Trailers double-wide or less, used as temporary or mobile facilities should be considered personal property when not acquired or intended for permanent use.

(2) **Related personal property** is any personal property that is an integral part of real property or is related to, designed for, or specifically adapted to the functional or productive capacity of the real property, the removal of which would significantly diminish the economic value of the real property or the related personal property itself. Examples of related personal property are communication systems and telephone systems. Normally, common-use items, including but not limited to general-purpose furniture, utensils, office machines, office supplies, and general-purpose vehicles, are not considered related personal property.

b. **Financial Controls Over Real Property.** Detailed records of DOE-owned property should be maintained by the DOE field element, or by a designated contractor. The only exception to this requirement is that Government-owned land and land rights should be included in the detailed records of the responsible DOE field element. The summary financial control records maintained by field elements and contractors should include, at a minimum, the reporting code of the organization holding the property, the site code, the type of property (asset type), the acquisition cost, the accumulated depreciation, and the use of status code. Accurate and up-to-date accounting records should be maintained to provide the proper accountability for DOE's investment in property. As property is acquired, transferred, retired, or otherwise taken out of service because of loss, consumption, or casualty, documentation should be prepared, retained, and used to support entries into the accounting records, to authorize disposals and transfers, and to explain total or partial losses of property.

c. **Purchase of Real Property is accounted for as follows:**

(1) The cost of land and land rights includes the purchase price, other acquisition costs, and net costs of removing or wrecking any facilities acquired with the land.

(2) The cost of completed facilities purchased from non-Government sources includes the purchase price, other costs incident to the purchase, and the net cost of converting the facilities to make them useful to DOE. Exceptions to this policy must be authorized by the CFO.

d. **Improvements to Property of Others.** The Comptroller General has established as Government policy that, in general, the Government may not make permanent improvements to non-Government-owned land. The basic premise on which the Comptroller General has allowed exceptions to the policy against permanent improvements to private property is whether the Government's interests in the overall project are adequately protected

with respect to such improvements. In making such a determination, the Comptroller General has established the following general criteria that must be addressed in order to allow the use of Federal funds for such improvements:

(1) The expenses of the improvements are nominal in comparison with the total price of the contract;

(2) The improvements are incident to and essential for the accomplishment of the authorized purpose of the appropriation; and

(3) Improvements are used for the principal benefit of the Government (46 Comp. Gen. 26, 27, (1966); 42 Comp. Gen. 480 (1953)).

e. Leasing. A lease is an agreement conveying the right to use an asset or part of an asset (such as part of a building) from one entity (the lessor) to another (the lessee) for a specified period of time in return for rent or other compensation. For additional guidance on leases refer to Chapter 5, "Accounting for Obligations," paragraph 4a(7)(d), and Chapter 11, "Liabilities," paragraph 2h. There are two types of leases: an operating lease and a capital lease.

(1) Operating Lease. An operating lease is a rental agreement requiring periodic payments for the use of an asset during a period. An operating lease does not represent the purchase of an asset; consequently, no new assets are recorded in the accounting records of the lessee.

(2) Capital Lease. A capital lease is an agreement that transfers substantially all the benefits and risks of ownership to the lessee. If, at its inception, a lease meets one or more of the capital lease criteria in the SFFAS, it should be classified as a capital lease by the lessee. Otherwise, it should be classified as an operating lease. For leased equipment see 10-23.

(a) Lease Purchase. A lease purchase is a special category of capital lease. A lease purchase is an agreement that meets capital lease criteria. In addition, the agreement indicates no substantial private risk; that is, either there is an explicit Government guarantee of third-party financing, or the Government assumes all the risks of asset ownership. A determination of private sector risk must be assessed on a case-by-case basis.

(b) Funding Exception. A capital lease or a lease purchase of telecommunications equipment is considered to be a purchase of public utility services.

(3) Leasehold Improvements. Leasehold improvements should be recorded in the completed PP&E account using the improvement to the Property of Others asset type.

(4) Criteria. For specific criteria on distinguishing between operating versus capital leases, refer to the SFFAS for accounting purposes and OMB Circular A-11 for funding purposes.

f. Distinguishing Construction and Fabrication Activities from Research and Development. For budgeting, accountings, and reporting purposes, use the following criteria in distinguishing between the costs of research and development activities (operating expenses) and the costs of construction and fabrication activities (capital). These criteria are applicable regardless of whether the services are performed by a research and development, operating, architectural-engineering, or other contractor. When a DOE research and development laboratory or other operating contractor performs research and development activities and acts as prime contractor for design and construction work for DOE, provisions must be made for a clear separation of costs between these two categories of activities, in accordance with criteria described below.

(1) Research and Development Activities

Research and development activities generally include all work up to the time when the ideas or conceptual design for the project or individual components are crystallized and are ready for the preliminary design work (Title I) leading to a specific construction or fabrication project. Research and development activities include the development of conceptual designs, origination of ideas, and investigations to obtain scientific and engineering data, as well as activities directed toward the investigation and development of technical improvements in such projects, processes, systems, or components during the construction or fabrication period. The transition from the research and development phase to the construction and fabrication phase generally will not occur at one time because the design and construction or fabrication of some systems and components may be in progress while research and development work on other systems and components is being continued. Further, with respect to a given component, research and development may be continuing simultaneously with its fabrication or construction to optimize the design and quality of the particular component and its integration into the plant as a whole. (Research and development

expense funds should not be used for activities or items that are to be capital funded.)

(2) Construction and Fabrication Activities

Construction and fabrication activities generally include the design and engineering for a specific project or for the components of a project after the ideas or conceptual design are crystallized; the procurement, fabrication, erection, and installation of all materials and equipment constituting the project; models built for size and spacing in connection with preliminary (Title I) and final (Title II) design work; the preparation of operating manuals; and the preoperational testing of the project components. The cost of components that are constructed for a project but that fail to perform as expected and are abandoned, as well as post-crystallization-of-design engineering work, should be included in the cost of construction or fabrication activities. The cost of construction work performed by DOE and integrated contractors should include an appropriate share of indirect or overhead costs.

g. Experimental and Demonstration Projects.

(1) When such projects as full-scale test facilities or other prototype facilities are undertaken to obtain data related to specific investigations and to demonstrate the feasibility of a particular process, the costs incurred for design, procurement, or fabrication of components, the cost of assembly, and all costs of operations during the experiment may be budgeted and accounted for under an appropriate operating expense program activity. However, when the construction and final testing of such prototype or demonstration facilities are completed, the head of the field element should determine if the completed facility meets the capitalization criteria in paragraph 1d. If it does, then the cost of the completed project should be capitalized and recorded in the financial accounts for completed PP&E.

(2) When a facility is expected to continue to operate as an experiment or demonstration, or when it is expected that the experiment or demonstration will become a productive facility even though primarily constructed for experimental or demonstration purposes, it should be treated as a capital construction project for budgeting as well as for accounting purposes. Pilot plants also should be treated as capital

construction projects when these plants are connected with full-scale construction plant engineering requirements and will be expected to continue to operate as models until the full-scale plant is constructed, in operation, and accepted for production purposes. When construction is completed, a pilot plant budgeted under operating expense because its service life could not be determined initially should be capitalized into the completed PP&E categories even though the plant is directly connected with the construction of a full-scale plant and is expected to operate only as a pilot plant until the full-scale plant is constructed, in operation, and accepted for its intended purpose. A final cost report should be provided to the field CFO of the cognizant field element for capitalization in the completed PP&E categories. The costs of designing and constructing all buildings or structures in which experiments or demonstrations are to be conducted–as well as the related auxiliary or supporting facilities, such as utility systems, roads, and walks–should be included in the construction project and capitalized when completed.

(3) Capital equipment required to support experimental and demonstration projects should be treated as capital equipment not related to construction unless it can also be reasonably expected to be consumed or destroyed during the experiment or demonstration. The costs of that equipment should be recorded in the completed PP&E categories when purchased, regardless of the source of funding.

(4) When it is not easy to ascertain the actual costs of items of PP&E that were budgeted and accounted for under the operating expenses appropriation that were subsequently capitalized, those items should be recorded in the completed PP&E categories by using estimated amounts approved by the head of the field element.

h. General Plant Projects (GPPs).

(1) GPPs are miscellaneous minor new construction projects of a general nature, the total estimated costs of which may not exceed the congressionally established limit. GPPs are necessary to adapt facilities to new or improved production techniques, to effect economies of operations, and to reduce or eliminate health, fire, and security problems. These projects provide for design or construction (or both), additions, and improvements to land, buildings, and utility systems, and they may include the

construction of small new buildings, repairs or additions to roads, and general area improvements.

(2) By their nature, GPPs are difficult to detail in advance and are subject to changing priorities and requirements, emergencies, and contingencies arising after the budget submission that may force changes in scope, schedule, and the order in which these projects are undertaken.

(3) GPP funds are not intended to be used in incremental segments to construct larger facilities. Care should be exercised to ensure that each specific project is a discrete, stand-alone entity. Each project is to result in the delivery of a complete and usable facility including the initial complement of equipment required for the facility to meet its intended purpose. In this regard, only GPP funds can be used to make the facility complete and usable.

(4) When design is funded in one fiscal year and construction is funded in the next fiscal year, every effort should be made to complete the construction as early as possible. The cognizant field element must maintain controls to ensure compliance with the congressional established limit and incremental funding prohibitions.

i. Existing Facilities Moved Because of Construction Activities.

(1) Moving existing permanent facilities, such as utility lines and roads, because of construction activities involves the retirement by removal or abandonment of existing facilities and the addition of new facilities. Such new facilities should be budgeted and accounted for as a cost of the new project. Removal costs should be charged to Construction Work in Progress for Removal Costs. Credit the book cost of materials reused in the new project to Construction Work in Progress for Salvage Credits, and charge the assigned cost to the new project. The book cost of other materials salvaged should also be credited to Construction Work in Progress Salvage Credits, and this cost should be charged to inventory or other appropriate accounts. Removal costs and salvage credits should be closed from these accounts to the appropriate accumulated depreciation account. The retirement loss (the difference between the new amount closed to the accumulated depreciation account and the depreciation accrued on the retired facilities to the date of retirement) should be charged to Plant and Capital Equipment Adjustments Extraordinary Losses. The book cost of the retired facilities should be closed directly to the appropriate accumulated depreciation account.

(2) Costs of moving temporary construction facilities should be charged to Construction Work in Progress accounts and distributed to all projects served by the temporary facilities.

j. Closeout of Construction Projects.

(1) The total cost of a line item or general plant project or an operative unit within a project should be closed to the completed PP&E categories from the Construction Work in Progress account as close to the date of beneficial occupancy as possible, but generally not to exceed 6 months after each operative unit is placed in full service. Project management staff should notify finance staff of beneficial occupancy of a facility. Each principal element of a construction project, such as a building, a parcel of land, or a warehouse that has been physically and financially completed except for the settlement of minor outstanding claims should be closed to the completed PP&E categories on the basis of actual total cost incurred to date. To maintain project historical data, significant costs incurred in the settlement of claims outstanding at the time the project is closed, and claims arising after an element has been closed, should be recorded in the Construction Work in Progress account when paid, but subsequently closed to completed Plant and Capital Equipment. Necessary adjustments to the original costs of the related property record units previously recorded should be made. Insignificant costs that arise later may be written off through PP&E adjustments. Costs of individual elements closed during the year may be initially assigned to asset type Unclassified Plant and Equipment, but at yearend such costs must be appropriately reclassified (based upon estimates, if necessary) to their probable asset types.

(2) The finance and project management staffs should establish effective procedures to provide for the closing out of construction projects in whole or in part as soon as feasible after beneficial occupancy and acceptance by DOE.

(3) The prime construction contractor or architect-engineer should prepare the final cost report, depending on the type of contracting involved. The final cost report provides a basis for entering construction project costs in the continuing property records and a means for determining the costs of property record units, and therefore should be prepared under the general joint direction of finance, construction, and property management in the responsible field element.

k. Reporting Requirements. The real property recorded on the financial records of DOE and its integrated contractors should be reported in the financial statements of the Department. Generally, the financial statements or the footnotes thereto should disclose, at a minimum, the following:

(1) Real property classified into the following categories (separated by depreciated and nondepreciated assets):

(a) Land and improvements, and

(b) Structures, facilities, and improvements.

(2) Construction Work in Progress;

(3) The basis for determining asset value; and

(4) Additions to and retirements of real property each fiscal year.

l. Reconciliation of Real Property. DOE organizations and integrated contractors should annually reconcile their real and related property records with summary financial control records. The annual reconciliation should use the financial control records as of 9-30. To assist with the reconciliation of the FIMS and the Standard Accounting and Reporting System (STARS), the following guidance should be observed:

(1) STARS should contain the official DOE financial control amounts.

(2) To permit agreement with the 9-30 STARS financial control records, restrict changes and additions to FIMS to real property changes incurred only through 9-30.

(3) To ensure that real property changes are recorded in the same month and amounts in both STARS and FIMS, both financial and facility management should coordinate real property changes.

(4) Only appropriate real property asset-type and use status codes should be used.

(5) The cognizant project manager should provide an allocation to the appropriate asset type codes for any project in which the property has been accepted for beneficial occupancy, even though the final cost report is not complete.

3. PERSONAL PROPERTY AND CAPITAL EQUIPMENT.

a. Definition. For financial management purposes, personal property is generally capitalizable property that can be moved and that is not permanently affixed to and part of the real estate. Generally, items remain personal property if they can be removed without seriously damaging or diminishing the functional value of either the real estate or the items themselves.

b. Capital Equipment-Type Accounts. Ledger subsidiary accounts should be maintained to include capital equipment by account and additional data code elements, such as asset type, use status, and site.

c. Financial Controls Over Capital Equipment.

(1) All capital equipment, except as qualified below, should be recorded in the completed Plant and Capital Equipment ledger control account, which is supported by summary and detail accounts for each DOE activity.

(2) The Construction Work in Progress account should identify the costs to purchase, fabricate, and install individual items of capital equipment not related to construction using PP&E appropriated funds. When the individual items are installed and placed in operation (or, in the case of offsite nonintegrated contractors, reported in the semiannual report), they should be closed to the completed PP&E category. The costs to similarly acquire capital equipment using expense funds should be accumulated in the program value programmatic activities and transferred (using accounting entries) directly into the completed Plant and Equipment account.

(3) Financial records should not duplicate the detailed property records maintained by the cognizant property officer. However, for internal control purposes, the balances in the financial accounts should be reconciled semiannually with the detailed property records.

d. Equipment Acquired by Purchase.

(1) The cost of equipment acquired by purchase includes invoice cost, less discount, plus transportation charges, modification, and installation costs. If property acquired by purchase includes a trade-in, the recorded cost of the purchased item should be the net invoice cost plus the allowance for the traded-in item.

(2) The amount capitalized under an installment contract includes the purchase price, other costs incident to the purchase (for example, freight), and the net cost to make the equipment ready for use. Record such equipment in the accounts at the time it is placed in service.

e. Equipment Acquired by Lease. The lease of capital equipment that meets the criteria as a capital lease (see paragraph 2e (2)) should be accounted for as a property acquisition at the time of delivery to DOE. The lease should be recorded at the lower of the property's fair value or the computed present value of the minimum lease payments by a debit to the completed PP&E category and an offsetting credit to a liability account (Deferred Credits). The difference between the total lease payment and the amount recorded as the capital lease is interest. A portion of each lease payment should be allocated to interest expense, and the balance of the payment should be applied to reduce the lease liability. To compute the amount allocated to interest expense, the same interest rate should be applied to compute the present value of minimum lease payments. PP&E Acquisition from Capital Leases, should be used for the asset write-on accounting entry.

f. Equipment Acquired by Construction. If an individual item of capital equipment related to a construction or fabrication activity is an integral part of that activity or is related to, designed for, or specially adapted to the functional or productive capacity of that activity, then the costs to purchase, fabricate, and install such an item should be included in the cost of the activity.

g. Equipment Fabricated. When the costs and estimated service life of items fabricated in a contractor's shop or by scientific personnel in a laboratory meet the capitalization criteria, the item should be capitalized and recorded in the Completed PP&E account. Actual costs should be used whenever possible, but a cost estimate, approved by DOE management, may be used when necessary.

h. Equipment Acquired by Transfer. (See Chapter 12, "Inter-Entity Transactions," for detailed instructions regarding the accounting for PP&E transfers between DOE offices, between DOE integrated contractors, and between DOE and other Federal agencies.)

i. Plant and Equipment Acquired by Foreclosure Processes. Property acquired by foreclosure processes should be recognized at its appraised value. The difference between amounts due, costs incurred, and the

appraised value of the assets acquired should be recognized as current period loss or gain.

j. Property Acquired by Other Means. Property acquired by donation, device, forfeiture, or confiscation should be recorded at the estimated fair value plus any costs incurred to place the property in use.

k. Equipment Acquired by Research. The cost of property purchased or fabricated for use in research may be charged to operating expense if the property is not expected to have a service life of 2 years or more in essentially its original form, even though it may meet the monetary and physical criteria that would otherwise require it to be accounted for as a PP&E addition.

l. Capital Equipment Acquired Through an Interagency Agreement. An interagency agreement is a written agreement entered into between two Federal agencies that specifies the goods to be furnished or tasks to be accomplished by one agency in support of the other.

(1) If capital equipment is purchased or otherwise acquired with other agency's funds, see paragraph 3m.

(2) If capital equipment is purchased or otherwise acquired with DOE funds pursuant to an agreement, unless otherwise agreed by DOE and the other Federal agency, the following should apply:

(a) The title thereto should vest in DOE;

(b) The other Federal agency should be accountable for the property until it is transferred to DOE; and

(c) The other Federal agency should maintain a record of capital equipment procured or fabricated.

(3) Unless expressly authorized by the contracting officer in advance, the other Federal agency should not be reimbursed for the procurement or fabrication of capital equipment.

(4) At the termination or completion of the agreement, accountability and control of items, regardless of dollar value, should be transferred to DOE, if so requested by DOE. If transfer is not requested, title should be transferred to the other Federal agency.

(5) Not later than 15 days after the close of each reporting period, the other agency should furnish DOE monthly or other periodic cost or financial reports in such form and detail as stated in the interagency

agreement. Any costs incurred for capital equipment should be supported by a list showing the description, make, any serial number, and the cost of each item acquired.

m. Property Belonging to Other Agencies. Property belonging to other agencies includes property that is borrowed or that is in DOE's possession through purchase with funds provided by others to perform their work in accordance with an interagency agreement. Each organization having custody of any such property should establish detailed procedures to provide effective control over the property. Property control, including the vesting of title, should be in accordance with the terms and conditions of the agreement (see DOE-PMR 109-1.5105) or the working arrangements for the use of funds and property of others. It is not intended that DOE record such property in its financial accounts, nor that depreciation be recorded thereon, if title is vested in the other party or parties. However, property management personnel are responsible for developing and administering detailed procedures for the control or property belonging to other agencies.

n. Special Tooling and Test Equipment. Special tooling and test equipment costs for nuclear weapons production are typically funded with operating expense funds and are budgeted for and accounted for in the dominant end-use activity. Special tooling and test equipment includes all nonstandard manufacturing tools, vendors' tools, and quality-acceptance and in-process test equipment and gauges, as well as tools initially required for development but intended at the time of procurement or fabrication for use in the manufacturing of weapons. Special tooling and test equipment costs should be recorded in production inventory and unit-amortized to benefiting product over the total production schedule. As such, they are exempted from being capitalized.

4. GOVERNMENT-OWNED, CONTRACTOR-HELD PROPERTY.

a. Purpose. To set forth the general policy to be used by the office of the field CFOs for establishing financial accounting for Government-owned, contractor-held property. Detailed property records maintained by contractors should not be duplicated by DOE. Financial control accounts are to be maintained by the appropriate office of the field CFO. Contractors' procedures are not covered except to the extent that such procedures must accurately and reasonably produce the information that is required by DOE to maintain accurate financial records of property. This section does not attempt to supplant the requirements of the Federal Acquisition or Property Management Regulations or the DOE Acquisition or Property Management Regulations for maintaining control over Government property, but it discusses topics of common interest to both finance and property management personnel.

b. Integrated Contractors.

(1) Definition. An integrated contractor is a contractor that works for DOE; uses DOE funds to finance its operations under a cost-type contract; and maintains a separate set of accounts and records for the recording and reporting of all business transactions under the contract in accordance with DOE accounting practices and procedures, and whose accounts, maintained for operations under the contract, are integrated with those of DOE.

(2) Financial Controls.

(a) The financial control between DOE and the integrated contractor is accomplished by integrating the contractor's accounts with those of DOE.

(b) At a minimum, property records of integrated contractors should include the following data, which should be useful to both finance and property management personnel:

1. Account and supplementary data code number (such as asset type, use status, and site);

2. Property record unit title and description, including inventory or property control number (U.S. Government identification tag number);

3. Location data sufficient to facilitate physical inventories and provide other necessary administrative controls;

4. Date of accounting entry;

5. Reference to accounting journal entry, project number, and other project information;

6. Date placed in service, if substantially different from the date of accounting entry;

7. Additions, quantity and dollar amount (acquisition cost, net of discounts);

8. Retirements, quantity and dollar amount; and

9. Standard or estimated service life.

(3) Reporting Requirements. Reporting requirements of integrated contractors are a part of the normal monthly or other periodic submissions to the cognizant STARS site.

(4) Reconciliation Requirements. The integrated contractor should identify, explain, and report to DOE the differences between its property records and the summary financial control records. The field CFO should approve all accounting adjustments to the financial control accounts.

c. Nonintegrated Contractors.

(1) Definition. An offsite nonintegrated contractor is one that works for DOE, receives DOE funds in reimbursement of operations, and maintains an accounting system for the recording and reporting of all business transactions under the contract and whose accounts are not integrated with DOE. An offsite nonintegrated contractor is not a transportation contractor, grantee, cooperative agreement recipient, or state or local government. The contractor is directly responsible and accountable for all Government property in its possession or control in accordance with the provisions of the contract, including property provided under such contract that may be in the possession or control of a subcontractor.

(2) Financial Controls. An offsite nonintegrated contractor should establish and maintain adequately detailed financial records on property acquisition, disposition, and fabrication as required by the contract. The cognizant field CFO should maintain the summary financial control accounts. At a minimum, property records of nonintegrated contractors should include the following data:

(a) Contract number;

(b) Asset type;

(c) Description of item (name and serial number);

(d) Tag number (Government ownership identity);

(e) Acquisition document reference and date;

(f) Manufacturer's name and model number;

(g) Location (physical area);

(h) Unit acquisition cost (including delivery and installation);

(i) Use status; and

(j) Site code.

(3) Reporting Requirements. The cognizant field CFO should establish procedures to require that payment vouchers submitted by contractors itemize accountable property purchases, categorized by DOE funding type, and record this information accordingly. In addition, the contractor should prepare a semiannual report (as of 2-28 and 8-31 of each year) for each of its contracts and subcontracts, showing, by asset type, the dollar amount and the number of line items of PP&E that were acquired, fabricated, or disposed of during the period. At a minimum, the report should show the beginning balance, acquisition, fabrication, disposition, and ending balance. The report should be submitted 45 days after the end of the reporting period, or final date of the contract if applicable. The original and two copies of this report should be sent to the property administrator, who, in turn, should provide copies to the contracting officer and to the servicing financial organization.

(4) Reconciliation Requirements. The above semiannual report provides DOE with financial data on DOE-furnished or contractor-acquired property in which title is vested with DOE, and facilitates the reconciliation of the detailed property accounts of the contractor with the summary financial control accounts of the cognizant DOE field element. Reconciliation means to compare the dollar acquisition cost, by asset type, of property in the possession of a contractor with the dollar, by asset type, of property in the corresponding financial control account. The contractor should identify and explain differences, and the field CFO should approval all accounting adjustments to the financial control accounts.

5. CONDUCT OF PHYSICAL INVENTORIES.

a. Frequency. Physical inventories are to be conducted at all DOE and contractor locations at regular intervals. Physical inventories of real property (such as fencing, buildings, other structures, utilities, and related support systems) are taken at least every 10 years. Physical inventories of capital equipment are to be taken at least every 2 years; sensitive items of equipment easily converted to or for personal use should be inventoried more frequently, whether recorded in the completed PP&E categories or in the equipment accountability records. When experience indicates that an exception to the above inventory cycle is warranted, prior approval of the Deputy Assistant Secretary for Procurement and Assistance Management will be requested, identifying the equipment classification, past experience

on physical inventories, the recommended inventory cycle, and any other justification to the change.

b. Reporting of Inventories. The results of all physical inventories of completed PP&E items taken at DOE field elements and at contractor locations should be provided to the property administrator, who should furnish a copy to the contracting officer and the field CFO for reconciliation with established financial control accounts. Inventory summaries should be prepared, showing cost, by asset type, to facilitate this reconciliation. A signed statement should accompany the results of each physical inventory, stating when the inventory was completed and whether the inventory agrees with the property records. A listing will be provided showing differences (item, quantity, cost, and circumstances). The head of the field element, the property administrator, and the field CFO should investigate all significant discrepancies identified through the physical inventory and reconciliation process, determine the causes, and effect remedial measures where possible in order to safeguard against waste, theft, and misuse of property. Adjustments to the accounting records for discrepancies between results of the physical inventory and the recorded PP&E should be supported by detailed adjustment analyses approved by responsible officials, including contracting officers, property administrators, directors of administration, and field CFOs.

6. PROPERTY ACQUIRED UNDER GRANTS, COOPERATIVE AGREEMENTS, AND SPECIAL RESEARCH CONTRACTS.

a. Introduction. This section establishes the criteria for the financial recording of property acquired or furnished under the terms of DOE grants and cooperative agreements.

b. Reporting Requirements. Annually, and at the completion of the agreement, recipients must provide to the contracting officer (who should provide a copy to the office of the field CFO) an inventory listing of DOE-owned property in their custody.

c. Reconciliation Requirements. The inventory reports should serve as the basis for reconciliation of capital assets with the financial control accounting records of the cognizant field CFO.

7. DEPRECIATION.

a. Introduction. Assets are recorded at acquisition cost and in accordance with definitions of types of assets (such as buildings, motor vehicles, and computers). It is the policy of the Department to report depreciation for all Departmental activities and programs. Accumulated depreciation accounts

are maintained and reported for each asset type classification of PP&E except Minerals and Timber, for which accumulated depletion accounts are appropriate, and Land, which is not depreciated. Depletion is further explained in paragraph 7f(4).

b. Depreciation Base.

(1) Depreciation charges should be based on the cost of depreciable assets recorded in the PP&E categories, less the estimated net salvage value, if significant. Net salvage value is the actual or estimated amount recovered or recoverable from the sale, transfer, or reuse of retired PP&E, less expenditures for the sale or transfer. Charges to inventory or other appropriate accounts for reusable materials or parts recovered from retired units also are considered as salvage (including plant and equipment with inherent useful value, as well as the value as scrap material).

(2) Generally, all limited-life property, including property being acquired by capital lease, is considered depreciable, whether in service or in standby.

(3) All items of property that have an unlimited life, or for which the salvage value is estimated to equal the original cost of the assets, should be considered as nondepreciable. Such assets include those recorded in the asset type classifications for Land, Land Rights, and Site Preparation, Grading, and Landscaping. However, land rights acquired for a limited period of years are depreciable.

(4) The straight-line method of assigning depreciation expense to accounting periods is to be used generally throughout DOE. The units-of-production method may be used only in special cases where applicable, such as depreciating automotive equipment on a mileage basis or construction equipment on a hourly use basis.

(5) Depreciation should not be calculated for the following PP&E categories: Excess Plant and Equipment, and Reserve Construction Equipment Pool. PP&E should not be depreciated in the process of construction until the facility, or segment thereof, is placed in service and the cost closed or transferred to the completed PP&E categories.

c. Depreciation Methods. The following methods of applying straight-line depreciation may be used:

(1) Unit Procedure for Computing Depreciation Expense. Under the unit procedure, a unit of property is depreciated at a rate based

on its specific service life. If it is retired from service because of normal causes before the expiration of its estimated service life, the retirement loss is charged to depreciation expense and a credit is made to the accumulated depreciation account.

(2) Group Procedure for Computing Depreciation Expense. Under the group procedure, an average service life is determined for all like units. An average depreciation rate is determined and applied to the total cost of a group of similar units. Depreciation expense applicable to surviving units in the group continues as long as any of the units remain in service, regardless of age. At the time the retirement work order is closed, and if the retirement is due to normal causes, the original cost of the retired facilities may be charged to the accumulated depreciation account, and no loss or gain is recognized.

(3) Composite Depreciation Rates. Composite depreciation rates may be applied to PP&E categories in computing depreciation amounts, provided the composite rates are based on calculations using particular groups of assets (for example, trucks, cars, and buses) and their applicable individual rates, and not on rough general estimates. Composite rates should be computed by applying the appropriate individual rates to the cost of each group included in the account and dividing the sum of the amounts thus obtained by the total balance of the account. Composite rates should be redetermined whenever substantial changes occur in the relative proportion of different groups in an account or when individual rates based on standard service lives are changed. To illustrate, assume a PP&E category includes three groups of units, each having a different depreciation rate. The computation of the composite rate would be as follows:

Group	Book Cost ($)	Rate(%)	Annual Depreciation ($)
1	10,000	20 (5 years)	2,000
2	5,000	16.6 (6 years)	830
3	35,000	10 (10 years)	3,500
	50,000		6,330

The composite annual depreciation rate in this situation would be:

$\frac{\$6,330}{\$50,000} = 12.7\%$

d. Standard Service Lives

(1) List of Standard Service Lives. When standard service lives are provided as part of the procurement or build to of a PP&E, the provided service life should be used for depreciation purposes. Absent a service life, the list in Attachment 10-1 should be used to determine depreciation rates for all other items of completed PP&E except for those items having service lives that are materially different from normal averages because of the peculiarity of their use or other special conditions. The list is expanded or revised as required. Extraordinary obsolescence and nonrecurring casualties were not considered in establishing these standard service lives.

(2) Revision to Standard Service Lives. Requests for each revision to the standard service lives should contain a complete description; use made, unit costs, retirement history of identical or comparable items, and recommended service life (including support for the recommendation). In addition to this information, the following must also be described fully: the peculiar uses or other considerations, the dollar investment in the anticipated net salvage value of PP&E for which revision is requested, and any other information considered pertinent to the specific case. The CFO should review and approved all requests for revision to the list of standard service lives. (PMAs should refer to publications or studies on utility plant service lives.)

e. Recording Depreciation. Depreciation should be recorded monthly. When major retirements or additions occur that are large enough to materially affect the depreciation expense related to unit product costs or to the depreciation expense applicable to other DOE activities (such as work for others), adjustments to the depreciation base should be made effective with the first of the month following the month in which the change occurred. Depreciation on the PP&E in each use status should be treated as follows:

(1) In Service. Depreciation on PP&E in service should be charged to the appropriate program values (for example, production cost, development, research, or program directions) in which the items are used.

(2) In Standby. Depreciation on PP&E in standby should be charged to the budget and reporting classification of former use. However, when there is a definite plan for the future use of the PP&E in standby, depreciation should be charged to the program values of future use. However, standby expense items applicable to

production activities should be reported (but excluded from product inventory) as other production expenses.

(3) Equipment Held for Future Projects. To the extent that equipment in this classification can be identified as being held for use in a given program values, the depreciation expense on such equipment should be allocated to that program values. For equipment held for general or multipurpose use, depreciation expense should be allocated to program values on a reasonable and equitable basis.

(4) Excess. Depreciation on excess PP&E should not be calculated.

f. Exceptions.

(1) Extraordinary Obsolescence. Premature retirements of large groups of facilities that make up an entire process or other function, or a large segment of a process or other function, that result from unusual and revolutionary changes in technique or other radical changes approved by DOE are considered as retirements due to extraordinary obsolescence. Such retirements cannot be foreseen or anticipated and therefore are not considered in establishing depreciation rates. Retirement losses resulting from extraordinary obsolescence should be accounted for by debiting Plant and Equipment Adjustments–Extraordinary Obsolescence and crediting the appropriate accumulated depreciation account. Retirements of isolated individual units of equipment should not be considered as resulting from extraordinary obsolescence.

(2) Casualties. Retirements of PP&E resulting from casualties that cannot be foreseen or anticipated, such as storms, earthquakes, explosions, and fires, should not be used in establishing depreciation rates. At the time of retirement, the net book cost of PP&E retired due to such causes should be written off as a cost.

(3) Depreciation of Improvements to Property of Others. Depreciation accruals on PP&E included in the Improvements to Property of Others account should be based on the normal service lives of the PP&E involved or the estimated period of occupancy, whichever is less. Any cost of PP&E remaining on the records at the termination of the contract should be written off–either at that time or upon the disposal of the property–by charging the Plant and Equipment Adjustments account.

(4) Calculation of Depletion. To calculate depletion, an estimate is made of the amount of natural resources to be extracted, in units of

tons, barrels, or any other acceptable measurement. The estimate of total recoverable units is then divided into the total cost of the depletable asset to arrive at the depletion rate per unit. The annual depletion expense is the rate per unit times the number of units extracted during an accounting period.

(5) Oil and Gas Producers. In computing depletion for properties that contain both oil and gas, convert the oil and gas reserves and the oil and gas produced to a common unit of measure on the basis of their approximate relative energy contents (without considering their relative sales values) unless either oil or gas clearly dominates both the reserves and current production. Units-of-production amortization rates should be revised whenever there has been a significant change in oil and gas reserves, but at least once a year. Capitalized costs should be amortized in the following manner:

(a) Acquisition, exploratory, and development costs of proved properties on a units-of-production basis, using recoverable reserves;

(b) Costs of facilities for extracting, gathering, and storing oil and gas on a units-of-production basis; and

(c) Cost of gas plants on a straight-line basis (one half of 1 year depreciation in the year of acquisition, and the other half in the year of disposition).

ATTACHMENT 10-1

STANDARD SERVICE LIVES

Item	Service Life (Years)
Absorbers	20
Accelerators	20
Acid handling equipment	10
Absorbers	20
Agitators and mixers	20
Air-conditioning equipment:	
Large (over 20 tons)	20
Medium (5-20 tons)	15
Small (under 5 tons)	10
Air coolers (spray oil)	20
Aircraft	12
Air preheaters	25
Air supply units	20
Alley, robot, complete	10
Ash handling systems	20
Autoclaves	20
Automatic data processing equipment	5*****
Automotive equipment:	
Ambulances	10
Buses, passenger	10
Carriers, weapon	10
Cars, armored	10
Jeeps	5
Sedans	6
Scooters	6
Station wagons	6
Trailers, automotive (all types)	10
Trucks (all types):	
Heavy	10
Light	8
Bag sealers	20
Baking panels	20
Balers:	
Metal	25
Paper	20
Bar turners	15
Bath, temperature	20
Batteries, storage (stationary)	10
Battery chargers	10

Item	Service Life (Years)
Beds, cooling	25
Benches, work:	
Metal	10
Wood	15
Bevatrons	20
Binoculars and telebinoculars	15
Bins, storage:	
Concrete	35
Metal	30
Wood	15
Blenders, dry material	20
Blowers, exhaust, portable	10
Blowers and fans	20
Boats	10
Boiler feed water system	25
Boilers	25
Boothers, ingot separation, complete	8
Boxes, fare	15
Breaching and flue systems	25
Breathing air system	20
Bridges, highway:	
Concrete	50
Steel:	
Heavy	50
Light	35
Wood	15
Briquetters	20
Buckets:	
Load lugger	20
Slug	20
Buildings:	
Temporary, light wood frame, plywood or sheet metal exterior walls or arched sheet metal construction	10
Prefabricated (rehabilitated flattops)	20
Wood framing, exterior walls covered with wood siding, asbestos shingles	30
Light steel structures with finished interiors	30
Masonry exterior walls, wood interior framing or steel frame with metal panel walls, corrugated sheet metal siding and roofing	40
Masonry exterior walls, concrete or steel frame	50
Bus, electrical	Same life as principal structure, but not to exceed 50 years
Cabinets, drying, firehose	15
Cable, aerial, telephone	30

Item	Service Life (Years)
Cable, underground:	
Telephone	30
Electric	40
Calciners:	
Pot	5
Trough	10
Tube:	
Under 1,000°C	10
1,000°C and above	5
Canning stations	20
Capacitors	25
Car mover or puller, railroad	20
Carrier current telephone equipment	15
Car spot, railroad	30
Cathodic protection units	15
Cells:	
Electrolytic	20
Electrolytic, steel-fluorine production	5
Mockup facilities	20
Structural	20
Centrifuges	20
Chargers, slug, portable	20
Chargers, stationary (remote charging cave)	25
Chime recovery system	10
Chime straightener	15
Chlorinators	20
Circuit breakers, power	25
Classifiers:	
Hydro	30
Mechanical, wet	30
Cleaners:	
Furnace pot	20
Natural gas	25
Clocks, watchman	15
Coal handling systems	20
Comminutors	15
Communication systems (excludes intercommunication systems)	30
Community furnishings and equipment:	
Barber and beauty shop equipment	10
Dormitory and hotel furniture and fixtures	15
Dry cleaning fixtures	15
Grocery store furniture and fixtures	15
Musical instruments	10

Item	Service Life (Years)
Playground equipment	10
Shoe repair shop equipment	15
Theater furniture and equipment	15
Compressors	25
Compressors, gaseous diffusion cascades	40
Concrete finishing machines, portable	10
Condensers:	
Gas	20
Synchronous	30
Conductors:	
Overhead	35
Underground:	
Electric	40
Telephone	20
Conduit, underground:	
Electric	40
Telephone	50
Containers, trash	15
Control systems	20
Converters	20
Converters:	
Condenser, and tube test system	15
Dry ice	25
Gaseous diffusion cascades	40
Conveyors	20
Coolant systems	30
Coolers	20
Cosmotrons	20
Counters, traffic	15
Cranes, mobile, crawler	15
Cranes and hoists, installed	30
Crucible loading stations	20
Crushers	20
Crystallizers (over 100-ft3 tank size, 40 ft of deck length, or 3 ft2 of cooling surface per linear foot)	15
Curtains, ventilation	10
Cutters, shade	10
Cyclotrons	20
Cylinders, product storage, steel	40
Dams	100
Deaerators	25
Decks, slime	20
Degasifiers	20
Degreasers	20

Item	Service Life (Years)
Deheaders, drum	10
Dehumidifiers (over 20-ft3 tank size)	20
Deionizers (over 100,000 g of CaCO)	25
Demineralizers	25
Demulsifiers	20
Denitration units	10
Digestors (over 100 gal)	10
Dishwashers, electric	10
Dissociators, ammonia	20
Dissolvers	10
Drainage systems, open	50
Drills, earth	10
Drum painting and drying stations	10
Drums, cylinders, and containers	10
Drunkometers	10
Dryers	20
Dumpers, drum	20
Dust collectors	15
Economizers	25
Elevators	25
Elevators, portable	10
Engravers and engravographs	10
Evaporators	20
Exciters	25
Exposure fields	25
Extrusion presses	20
“F” machines	20
Feeders	25
Fences:	
Chain link	25
Wire	15
Wood	15
Filter presses	20
Filters	20
Fire alarm equipment	25
Fire fighting equipment, mobile	15
Flagpoles	30
Flexible shafts, with motors	15
Freezers, electric	15
Furnaces:	
Electric:	
Reaction	20
Remelt	20

Item	Service Life (Years)
Hearth	25
Heat treating	25
Roasting	20
Tilting pot	20
Garage equipment	10
Generators:	
Electric:	
Emergency, turbine driven	30
Diesel driven	25
Motor driven	25
Gas	25
Van de Graaff	20
Geological equipment:	
Geiger counters	10
Scintillometers	10
Globes, geographic	15
Grates, sluice	50
Grease flotation units	20
Grounding systems	40
Ground wires, overhead	40
Guard towers Rate according to type of construction	
Guns, deluge	15
Gymnasium equipment (such as boxing rings, rowing machines, tumbling mats)	10
Health instruments	10
Heaters	25
Heaters, portable, electric:	
Over 10,000 Btu	10
10,000 Btu and under	5
Heat exchangers	20
Hoppers	25
Hospital and medical equipment:	
Beds and hospital furniture	15
Dental chairs	15
Medical instruments	10
X-ray equipment	15
Hot mix plants	20
Hydrants, fire	50
Hydraulic accumulator systems (pneumatic oil)	25
Hydraulic pressure boosters	20
Incinerators	20
Industrial trucks and tractors	10
Instrumentation, gaseous diffusion cascades	25

Item	Service Life (Years)
Instruments:	
Engineering	25
Industrial	15
Measurement and control	10
Surveying	25
Intercommunication systems	15
Irrigation canals	100
Janitorial service equipment	10
Jolters	5
Kettles, heating and melting	15
Kilns (over 50 ft3)	20
Laboratory equipment:	
Hoods	15
Photographic equipment	10
Professional and scientific instruments	10
Pumps and other general equipment	20
Sinks, cabinets, and other furniture	20
Special radiation instruments, apparatus, and accessories	10
Ladders, extension, metal (30 ft and over)	10
Laundry equipment	15
Lighting fixtures, street and fence	20
Lightning arresters	25
Light plants, emergency	25
Loaders	5
Locators, cable fault	15
Locker assemblies	10
Lubrication oil systems	20
Magnets, lifting	15
Magniflux machines	15
Manholes	40
Mannequins, thyroid uptake and calibration	5
Meters, customer:	
Electric	25
Gas	25
Water	30
Meters, speed:	
Electric	15
Radar	10
Mills, tumbling, wet grinding	20
Mixing machines, gas and air	20
Mobile and accessory equipment:	
Air compressors	15
Concrete mixers and pavers	10
Excavating machinery	10

Item	Service Life (Years)
Farm machinery	15
Pumps	20
Road machinery	10
Tractors	10
Welders:	
Electric	15
Gas	10
Mold coating systems	20
Monorail material handling systems	20
Motor generator sets	20
Motors:	
Electric	20
Internal combustion	10
Nets, lifesaving	15
Odorizers, natural gas	25
Office furniture and equipment:	
Furniture, fixtures, and filing cases:	
Metal	25
Wood	20
Mechanical equipment and machines	10
Safes and vaults	40
Oil bubblers	20
Oil recovery devices	20
Oil storage and filtering systems	25
Optical devices	25
Ovens, electric or gas	15
Partitions, movable	25
Photographic and reproduction equipment	10
Piles (see Reactors)	
Pipe supports, outdoor	20
Piping systems, indoor:	
Air	25
Gas	25
Process	25
Process, gas, gaseous diffusion cascades	40
Steam	25
Water	40
Piping systems, outdoor:	
Air	25
Gas	25
Process	25
Sewer	40
Steam	25
Water	40

Item	Service Life (Years)
Pistol or rifle range equipment	15
Platform lifts, portable	25
Platforms:	
Concrete	25
Steel	25
Transformer	20
Wood	10
Plating, coating, and stripping systems	5
Poles, crossarms, and fixtures:	
Steel	40
Wood	30
Pools, spray	20
Portable cranes, derricks, hoists, and winches	10
Portable scales	20
Portable tools:	
Air	10
Electric	10
Gasoline engine	10
Power mowers	5
Powerplants, portable	20
Power wiring system, indoor	25
Precipitators, electrostatic	20
Process equipment, heavy water	35
Projectors, contour	10
Proportioners, chemical	25
Protection equipment:	
Firearms	15
Fire extinguishers	10
Radio equipment	10
Protective breathing apparatus	15
Public address systems, portable	5
Pulverizers	15
Pumps:	
Water	20
Other	15
Purgers	25
Radiation source material:	
Cesium 137	15
Cobalt 60	5
Radium	50
Radios	10
Radio stations:	
Antenna	15
Towers	25

Item	Service Life (Years)
Transmitters	10
Railroad rolling stock:	
Cars	20
Locomotives	25
Railroads:	
Bridges and culverts	45
Grading and ballast	30
Rails and ties	25
Signal systems	25
Ranges, electric	15
Reactivators (100,000-g capacity)	25
Reactors (electrical system devices)	25
Reactors, nuclear:	
Production	25
Research	25
Receivers, air	25
Recreational facilities, outdoor	20
Rectifiers (over 10 kVA)	10
Refrigeration systems	20
Refrigerators	15
Regulators:	
Circuit and bus	25
Pressure	20
Remote handling equipment	10
Repulpers	20
Reservoirs and pits	50
Restaurant, cafe, and canteen equipment	10
Resuscitator units	15
Retaining walls:	
Concrete	40
Timber	20
Roads, walks, and paved areas:	
Asphalt	20
Concrete	30
Gravel or stone	15
Robots, general purpose	20
Rolling mills	20
Saddles	20
Sampler, automatic	15
Scales:	
Conveyor	20
Platform	20
Screens:	
Trash	35

Item	Service Life (Years)
Traveling	25
Vibrating	20
Scrubbers (tank over 20 ft3)	20
Security alarm system	25
Separation equipment	20
Septic tanks	35
Services:	
Electric	25
Gas	40
Sewer	30
Water	40
Sewage clarifier mechanisms	20
Sewer rod machines	20
Sewing machines	15
Shakers, car	20
Shears, powered	20
Shell loading machines	15
Shop equipment:	
Electric shop equipment	15
General maintenance shop equipment	10
Machine metalworking tools	25
Paint shop equipment	10
Pipe shop equipment	25
Plumbing shop equipment	25
Sheet metal shop equipment	25
Woodworking machinery and equipment	20
Shredders, paper	10
Silos:	
Concrete and masonry	50
Metal	40
Wood	20
Sludge drying beds	30
Sludge heaters	30
Slusher haulers	20
Spur tracks	25
Stacks:	
Concrete or masonry	50
Metal	30
Stitchers, wire	10
Stills	20
Straighteners, bar	20
Strapping machines	15

Item	Service Life (Years)
Structures, outdoor substation:	
Metal	40
Wood	25
Superheaters (tank over 20 ft3 or 100-ft2 surface)	15
Switchboards	20
Switches, disconnecting	20
Switchgear	30
Synchrotrons:	
Electron	20
Proton	20
Tables, pool	15
Tanks:	
Concrete	50
Metal	40
Process	25
Wood	15
Telephone exchange equipment	30
Telephone subscribers station equipment	30
Teletypewriter equipment	30
Thickener	20
Timer, driver training	20
Tools, process, installed	10
Towers:	
Chemical process	10
Cooling	15
Meteorological and other structural steel towers	25
Traffic lights	20
Transformers:	
Current and potential	25
Steel lighting	20
Transmission and distribution	30
Trestles	40
Tunnels	50
Turbines	25
Turbogenerators	30
Turntables (over 10 ft in diameter)	20
Unit substations	30
Vacuum systems	15
Vaporizers	20
Varidrives (over 5 hp)	20
Washers, drum or can	20
Waste gas burners	25
Water softening systems	25
Wells	40

Item	Service Life (Years)
Wires, open, overhead	25
Wiring systems, outdoor	30