ENVIRONMENTAL QUALITY

CHAPTER 20

MAJOR FACILITY SITING

Sub-Chapter 15

Application Requirements Facility Description and Design

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Application Requirements
Facility Description and Design

17.20.1501 ENERGY GENERATION AND CONVERSION FACILITIES, GENERAL REQUIREMENTS OF THE FACILITY DESCRIPTION AND DESIGN

(1) An application for an energy generation or conversion facility must contain an engineering description of the facility in detail sufficient to enable the department to assess the environmental impacts of construction, operation, maintenance, and decommissioning, and to assess reliability and construction and operation costs of the proposed facility at the proposed site as specified in ARM 17.20.1502 through 17.20.1505. These requirements apply specifically to fossil-fueled facilities and other facilities that utilize transportable energy resources. An equivalent description and design is required for all energy generation or conversion facilities defined by 75-20-104(8), MCA. Applicants for energy generation or conversion facilities that employ a nontransportable energy resource must consult with the department concerning facility description and design requirements. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2000 MAR p. 2984, Eff. 10/27/00; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1502 ENERGY GENERATION AND CONVERSION FACILITIES, DESIGN CHARACTERISTICS (1) An application must include a list of any reports, documents, studies, or calculations that indicate that the preliminary design specifications and performance objectives for the major components or process areas of the facility are adequate and can be maintained in the continuous operation of the facility. Design peak operating volume or rate must be described, including the length of time the various levels of peak operation can be sustained.

(2) An application must identify design features that were selected to reduce adverse environmental impacts.

(3) An application must describe any design features that are oversized to accommodate future increases in plant capacity.

(4) The engineering description required by (1) of this rule must include the following major facility components or process areas as applicable: boilers, reactors, generators, condensers, shift conversion facilities, cooling facilities, emission control devices, stacks, and catalyst production and regeneration facilities.

(5) An application must contain a description of associated facilities, including:

(a) a description of any major existing or new transportation system or terminal that would be used during the construction, operation, maintenance or decommissioning of the proposed facility and an estimate of the type, duration, and intensity of that use;

(b) a description meeting the requirements of ARM 17.20.1509 and 17.20.1510, for facilities of 230 kV and larger; for power lines smaller than 230 kV, a general description of the components listed in ARM 17.20.1509 is sufficient;

(c) communication installations;

(d) the proposed source of the fuel to be used by the facility and, if applicable, alternative fuel sources consistent with department Circular MFSA-1, Section 3.11, and a description of equipment and portions of the site that will be used to store, prepare and transfer the fuel to the point of consumption;

(e) all sources of water to be used by the facility, structures that would pump, convey, store, or treat the water, proposed drainage or flood control structures, and a description of the processes used to deliver water to and discharge water from the site, including operation and monitoring plans for water-supply reservoirs, ponds, and other diversions for municipal or industrial use;

(f) all waste-handling systems, both on and off-site, including a description of the collection, storage, treatment, disposal processes and monitoring procedures and plans for each system, consistent with the requirements of ARM 17.20.1504(5) (Operation and Maintenance Analysis);

(g) any other permanent structures or installations, and temporary structures or installations, both on- and off-site, that would be used only during the construction phase; and

(h) for water and fuel pipelines, a description meeting the requirements of ARM 17.20.1509 and 17.20.1511.

(6) An application must contain a topographic map at a scale of 1:4800 showing the proposed location of all facility structures and nonlinear associated facilities at or associated with the proposed site. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2000 MAR p. 2984, Eff. 10/27/00; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1503 ENERGY GENERATION AND CONVERSION FACILITIES, CONSTRUCTION DESCRIPTION (1) An application for a generation or conversion facility must include a preliminary construction schedule, a description of typical equipment, and a description of the sequential steps involved in carrying out major construction activities, including site preparation and an estimate of the amount of ground disturbance. The schedule must include associated facilities and relocations or development of transportation and other public use facilities necessitated by project construction, and methods of maintaining service during these activities.

(2) An application for a generation or conversion facility must contain a description of the following:

(a) plans for construction camps for the crew, if any, and any other temporary facilities used during construction;

(b) the methods the applicant will use to reclaim any temporary facilities;

(c) a schedule showing the anticipated timing of activities;

(d) methods the applicant will use for fire control; and

(e) for associated powerlines, a description meeting the requirements of ARM 17.20.1510, for voltages of 230kV and larger. For voltages less than 230kV, a general description of the components listed in ARM 17.20.1510 is sufficient; and

(f) for associated pipelines, a description meeting the requirements of ARM 17.20.1511. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1504 ENERGY GENERATION AND CONVERSION FACILITIES, OPERATION AND MAINTENANCE ANALYSIS (1) An application must contain a general description of operation and maintenance of the proposed facility under normal conditions, including types and scheduling of expected maintenance and inspections.

(2) An application must contain a discussion of the ability of the proposed facility to withstand possible destructive natural phenomena such as earthquakes, floods, and accidents; equipment malfunction or failure; a description of structural problems, and safety problems, or adverse environmental effects that may result from facility failure due to natural phenomena or accidents, and design features that will be incorporated or contingency measures that will be taken to reduce the problems.

(3) An application must discuss the environmental effects, if any, of operating the facility at less than full capacity, including effects on the operation of associated facilities and the resulting effects on air and water quality due to changes in the levels or composition of emissions and waste streams.

(4) An application must contain a descriptive analysis of materials such as air, water, coal and chemical compounds that would flow into the proposed facility, including an analysis of fuel materials used for start-up of the facility. The analysis must include at least the following:

(a) consumption rate;

(b) detailed chemical and radiological content of all input materials;

(c) heat content of fuel materials; and

(d) material and energy flow diagrams, including heat and radiant energy flows, to illustrate the path of major materials through the facility, qualitatively and quantitatively.

(5) An application must contain a qualitative and quantitative analysis of all materials that are projected to flow out of the facility. The analysis must include detailed chemical content of all output material based on the best information available, including material with radiological content. The method of using, treating, dispersing and disposing of materials in each of the following categories shall be discussed, including the method of monitoring the use, treatment, dispersal, disposal and ultimate reclamation of waste sites, as applicable, for each of the following categories:

(a) products and by-products such as gas and hydrocarbon liquid;

(b) waste materials, including gases, liquids, and solids;

(c) energy forms such as heat that escape during processing;

(d) for coal conversion facilities which are proposed to produce more than one major product, the capability for alternative fuels production or capacity to alter the product mix of facility output; and

(e) for associated powerlines and pipelines, a description meeting the requirements of ARM 17.20.1512.

(6) An application must contain an estimate of the on-line life of the facility and the projected operating capacity during the on-line life. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1505 ENERGY GENERATION AND CONVERSION FACILITIES, DECOMMISSIONING METHODS (1) An application must contain a description of the projected method and environmental effects of decommissioning the proposed facility at the end of its useful life, or explain why decommissioning the facility is not foreseen. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863.)

17.20.1506 ENERGY GENERATION AND CONVERSION FACILITIES, OPERATION UNDER CONTINGENT OPERATING C0NDITIONS (1) An application must contain a description of the methods of operation that will be used under contingent operating conditions to avoid significant impacts or disruption or damage to the environment or to human or industrial facilities.

(2) Contingent operating conditions include, but are not limited to:

(a) extraordinary environmental conditions such as extreme cold, heat, drought, flooding, or earthquake, or extensive wildland fires;

(b) technical contingencies such as failure of facility components; and

(c) external system conditions such as transmission or pipeline system outages that lead to excessive congestion or inadequate capacity to carry the full output of the facility or to provide needed energy for the facility. (History: 75-20-105, MCA; IMP, 75-20-211, MCA; NEW, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1507 ENERGY GENERATION AND CONVERSION FACILITIES, INTERCONNECTION AND TRANSMISSION AGREEMENTS (1) An application must include:

(a) either a copy of any and all interconnection and transmission agreements involving the proposed facility, or the following information for each such agreement:

(i) a brief description of the obligations of and the benefits to the facility under the agreement;

(ii) a list of all parties to the agreement;

(iii) the time period during which the agreement is in effect;

(iv) a summary of the terms of the agreement; and

(v) the financial agreements; and

(b) a description of all current and planned negotiations with respect to interconnection of the facility and transmission of energy. The description must include a list of the parties to any negotiations and a general discussion of the history and current status of the negotiations. (History: 75-20-105, MCA; IMP, 75-20-211, MCA; NEW, 2001 MAR p. 2410, Eff. 12/7/01.)

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17.20.1509 LINEAR FACILITIES, DESIGN CHARACTERISTICS

(1) An application must contain an engineering description of the facility in detail sufficient to enable the department to assess the environmental impacts of construction, operation and maintenance and reliability of the proposed facility located on the preferred route.

(2) An application must contain a list of any reports, documents, studies, or calculations indicating that the preliminary design specifications and performance objectives for the major components of the facility are adequate and can be maintained in the continuous operation of the facility.

(3) An application must identify facility design features that were selected in order to reduce adverse environmental impacts.

(4) For an electric transmission facility, an application must contain an engineering description of major facility components, including the following: structure design and materials; height range of structures; approximate number of structures per mile; ground wire configurations; types and designs of markers and other warning devices; number and spacing of conductors; and location, size, and overall plan of new and modified substations, including present and future land requirements.

(5) For an electric transmission facility, an application must contain specifications for design peak voltage and amperage under adverse climatic conditions and under expected peak loading conditions.

(6) For an electric transmission facility, an application must include an estimate of radio and television interference, and electric and magnetic field strengths. This information on electric and magnetic fields must be provided for cross-sections of the right-of-way and must include maximum conditions under the conductors and at the edge of the right-of-way or easement, and attenuation rates beyond the edge of the right-of-way. This information is also required at the property boundaries surrounding each substation which is proposed to be located in residential or subdivided areas and must include estimates of attenuation rates beyond the property boundaries.

(7) For an electric transmission facility, an application must contain a statement certifying that the facility will meet the standards of the national electric safety code.

(8) For pipelines, an application must contain an engineering description of the facility, including conduit size and thickness, tensile strength, test and operating pressure, methods of joining sections of conduit, trenching depth, amount of ground cover over the pipeline, the location, size and overall plan for new or modified pumping and compressor stations, cathodic protection systems, and other safety features. Facility design specifications or criteria must also

be provided for the normal and maximum transmitting or pumping capacity and pressure of compressor stations and pump stations.

(9) For pipelines, an application must contain a description of quality control and testing procedures and the information necessary to demonstrate that the facility can meet industry and US department of transportation pipeline standards.

(10) For pipeline, an application must contain a description of the source of power for pump and compressor stations and indicate on maps at a scale of 1:24,000, the proposed and alternative location of power supply lines for these stations.

(11) An application must contain a description of communication facilities that will be used to control and monitor operation of the facility and their location, including, but not limited to, radio, microwave, or satellite antennas, and any fiber optic cables. If fiber optic cables are used, the application must describe the use of any excess communication capacity.

(12) An application must contain a specific engineering or design explanation of the opportunities and constraints for paralleling or sharing existing utility or transportation rights-of-way, or portions thereof, and if such opportunities were not chosen for part of the preferred route, an explanation of the reasons, including insufficient right-of-way and/or other land use constraints. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1510 LINEAR FACILITIES, ELECTRIC TRANSMISSION FACILITIES, CONSTRUCTION DESCRIPTION (1) An application must contain a preliminary construction schedule, a description of typical construction equipment to be used, and a description of the steps involved in carrying out major construction activities, including plans for and use of staging areas, right-of-way clearing, access road construction, structure assembly, and conductor and sock line stringing.

(2) An application must contain an estimate of the amount of ground disturbance resulting from construction at a representative structure site, pulling site, and reel site.

(3) An application must contain a description of the types and sizes of roads needed to build and maintain the facility.

(4) An application must contain estimates of the minimum and maximum right-of-way widths for which permanent easements would be purchased for the cleared right-of-way, estimates of the minimum and maximum widths of any additional construction easements, a description of the criteria used to determine right-of-way widths, a description of any land use restrictions that would be placed on the permanent easement, and a general description of standard conditions in the easement agreement pertaining to protection of the facility from damage or pertaining to public safety and liability.

(5) An application must contain a description of the camps planned for the construction crew, if any, and how they will be operated.

(6) An application must contain a description of the reclamation methods the applicant will use and the scheduled timing of activities proposed to restore the right-of-way.

(7) An application must contain a description of methods the applicant will use for fire control. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863.)

17.20.1511 LINEAR FACILITIES, PIPELINE FACILITIES, CONSTRUCTION DESCRIPTION (1) An application must contain a preliminary construction schedule, a description of typical construction equipment to be used, an estimate of total equipment needs and a description of sequential construction operations, such as right-of-way clearing, trenching, pipe installation and backfilling, including estimates of the duration and length in miles of each operation and a description of plans for and use of staging areas.

(2) An application must contain an estimate and discussion of the width of the level work pad needed for construction operations.

(3) An application must contain an estimate of the area of ground disturbance resulting from construction activities, including an estimate of mileage of flat terrain where no cut and fill excavation would be needed and estimates of mileage of terrain where cut and fill excavation to construct a level work pad would be required.

(4) An application must contain a description of the methods that will be used to salvage topsoil, including:

(a) the width of the construction right-of-way where topsoil will be salvaged;

(b) the depth to which topsoil would be salvaged;

(c) the locations where alternative methods of topsoil salvage would be implemented; and

(d) the methods to be employed to remove coarse rock from surface soils following construction.

(5) An application must contain a description of the types and sizes of roads needed to build and maintain the facility, an estimate of the road mileage and preliminary road locations required in addition to the right-of-way, if any, in order to construct the facility on the applicant's preferred route or proposed location for an associated pipeline, and an estimate of how much the roads will be used.

(6) An application must contain a description of the minimum and maximum construction right-of-way widths and the widths of permanent easements, a description of the criteria used to determine the widths, and a description of any land use restrictions that would be placed on the permanent easement.

(7) An application must contain a discussion of the proposed and alternative methods of stream crossings, including:

(a) specification of equipment types;

(b) estimates of the width and depth of trenching; and

(c) estimates of the scour depth supported by a discussion of the methods and calculations used to make the estimates; and

(d) amount of ground disturbance adjacent to stream crossings.

(8) An application must contain a discussion of the proposed and alternative methods of and conceptual designs for overhead stream crossings, if any.

(9) An application must contain a description of the camps planned for the construction crew, if any, and how they will be operated.

(10) An application must contain a description of the reclamation methods that will be used to restore the right-of-way on sidehills and over the ditch, and the measures that will be implemented to address subsidence of soils over the trench after construction is completed.

(11) An application must contain a description of methods the applicant will use for fire control. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)

17.20.1512 LINEAR FACILITIES, OPERATION AND MAINTENANCE DESCRIPTION (1) An application must include a description of operation and maintenance procedures for the proposed facility under normal and emergency conditions, including types and scheduling of anticipated maintenance and inspections. For electric transmission facilities, an application must contain a description of methods the applicant will employ to resolve complaints from nearby residents regarding noise and radio and television interference.

(2) An application must contain a discussion of the ability of the proposed facility to withstand destructive natural phenomena such as mass movement, earthquakes, floods, icing conditions and high winds or accidents, a description of the environmental impacts and/or public safety problems resulting from facility failure due to natural phenomena and accidents, and a general discussion of measures proposed to reduce the problems.

(3) An application must contain a description of the methods the applicant will employ to control land uses on the right-of-way, including encroachment of buildings.

(4) An application must contain a description of the right-of-way management procedures that will be used, including vegetation and weed control, herbicide use, and the scheduled timing of the proposed management activities.

(5) For pipelines, an application must describe the size and frequency of leaks that can be expected over the life of the proposed project.

(6) For pipelines, an application must describe leak detection systems to be employed during operations including sensitivity of the leak detection system, the time necessary to shut down the facility in the event of a leak, and expected time necessary to respond to a leak.

(7) For liquid pipelines, an application must include a detailed spill contingency plan describing:

(a) immediate notification procedures;

(b) the type and location of emergency response personnel and equipment;

(c) any mutual aid agreements to supply personnel and equipment and respond in the event of a spill;

(d) response procedures;

(e) equipment testing procedures;

(f) frequency of field training exercises; and

(g) plan update procedures. The plan shall be sufficiently detailed so that the department can determine the likely environmental effects resulting from a spill. (History: 75-20-105, MCA; IMP, 75-20-211, 75-20-503, MCA; NEW, 1984 MAR p. 1844, Eff. 12/28/84; TRANS, from DNRC, 1996 MAR p. 2863; AMD, 2001 MAR p. 2410, Eff. 12/7/01.)