MANAGING HYDROPOWER PROJECT EXHIBITS

Guidance Document

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Administration & Compliance
888 First Street, N.E.
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This document was prepared by staff of the Office of Energy Projects, Division of Hydropower Administration and Compliance, for instructional purposes and does not necessarily reflect the views of the other members of the Federal Energy Regulatory Commission.

INTRODUCTION

Non-federal hydropower projects in the United States fall within the jurisdiction and regulatory approval process of the Federal Energy Regulatory Commission. In the hydropower project approval process, the project owner (licensee or exemptee) is required to submit drawings showing all project features, project boundaries, and all plans related to the development of the project (e.g., recreational plans). The drawing sheets are considered exhibits and each is individually referred to as an exhibit drawing. The drawings are submitted to the Commission for review, and, once approved, each sheet of the drawings is assigned an exhibit number and sequential drawing number.

The Office of Energy Projects (OEP) assigns and tracks exhibit drawings for proposed, licensed, and exempted hydropower projects. Along with the authorizing document (Preliminary Permit, License, or Exemption), exhibit drawings are the primary source of information about a hydropower project. Once a project is authorized, exhibit drawings are transferred to aperture card format (a punched card upon which a microfilm document is mounted) and electronic format and filed with the Commission for long term storage. Exhibit drawings are not generally stored in aperture card format for *proposed* projects; however, the drawings themselves are necessary in order to track the boundary of a project for land withdrawal from public use in accordance with Section 24 of the Federal Power Act. The OEP coordinates with the U.S. Department of Interior's Bureau of Land Management (BLM) for proposed projects on federal lands.

This document describes the process of preparing, approving, and retaining hydropower project exhibits. It also covers the Commission's requirements for managing project boundary and resource data in a geographical information system (GIS) format.

EXHIBIT DRAWINGS

When an applicant files for a preliminary permit, license, or exemption with the Commission, the application document includes project exhibit drawings to describe and show all project features, boundaries, and other information in sufficient detail to provide a full understanding of the project. The exhibit drawings differ depending on the type of application, and Appendix 1 provides an easy-to-use cite reference table. Appendix 2 contains the detailed text of the requirements.

In general, maps and drawings are identified as Exhibit F, Exhibit G, or Exhibit R. Exhibit Fs contain critical energy infrastructure information (CEII), as defined under the Commission's regulations at 18 CFR §388.113(c). Exhibit G's show the project boundary and principal project features. It is important to include the location of permanent geographical features such as roads, rivers, and other structures that may be found on a map and easily recognized in the field. In addition, the location of recreational features that are part of the project need to be shown on the project boundary. Exhibit R's show details regarding Commission approved recreational features that are part of the project. Appendix 2 contains the text of these regulations. Exhibits and filing requirements are described below:

Preliminary Permits

An applicant files a preliminary permit application for a proposed water power project to secure priority of application for a license under Part I of the Federal Power Act (FPA) while the permittee obtains the data and performs the acts required to determine the feasibility of the project and to support an application for License (18 CFR §4.80). The preliminary permit application must contain the following exhibit drawings (18 CFR §4.81(e)):

EXHIBIT	*DESCRIPTION*
4	map(s) necessary to show clearly and legibly project boundary, land ownership, proposed features, environmental details

Exemptions

An applicant files an exemption application for a proposed water power project to undertake the development of a small hydroelectric project at an existing dam. Applications for Conduit or Regular Exemptions (5 MW or less) are filed pursuant to 18 CFR §4.90 or §4.101 and are exempted from the license requirements of Part I of the FPA. The exemption application must contain the following exhibit drawings (18 CFR §4.92 or §4.107):

EXHIBIT	*DESCRIPTION*
G	general location map showing project physical structures, project boundary, land ownership
F	a set of drawings showing the structures and equipment necessary to show proposed features

All exhibit drawings must be of a quality, and contain enough detail for Commission staff to review and make decisions regarding project impacts to the surrounding environment. However, the Commission recognizes that certain projects will be of such a small size that it may be possible to relax some of the requirements for maps and drawings while achieving the same level of detail regarding a) the location of the project and the extent of land area impacted by the project works, and b) the proposed design of all power producing structures and equipment. Only applications for a 5-MW exemption or conduit exemption may qualify for a waiver to relax exhibit requirements, and any waiver of exhibit requirements granted will be project specific. For additional information refer to the Frequently Asked Questions regarding exhibit drawings, or contact FERC staff.

License

An applicant files a License application for a proposed water power project to undertake the development of a hydropower project as defined in Section 3(11) of the FPA. Depending on the type of project (major or minor, constructed or unconstructed, or transmission line), applications are filed pursuant to 18 CFR §4.40, §4.50, §4.60, or §4.70. The License application must contain the following exhibit drawings (18 CFR §4.39, §4.41, §4.51, §4.61, or §4.71):

EXHIBIT	*DESCRIPTION*
F	general design drawings of the principal project works, showing the major structures
G	a map of the project showing its location and principal features, project boundary, impoundments, contiguous/noncontiguous features, and federal and nonfederal land ownership
R (E)	drawings showing recreational features; drawings showing mitigation facilities for fish, wildlife, and botanical resources; drawings showing measures to ensure project works blend with the surrounding environment

PRELIMINARY PERMITS AND LICENSE APPLICATIONS

Exhibit drawings for "applications" are *not* required in aperture card format in the preauthorization review process. However, for those projects proposed on federal lands, it is extremely important the FERC and BLM concurrently track land withdrawals. By

statute (Section 24 of the FPA), federal lands are considered withdrawn upon receipt of a hydropower project application, so it is important that the BLM be notified of the withdrawal as soon as possible and receive a copy of the application, boundary exhibits, and Form FERC-587. The Commission's licensing staff works with the applicant to make sure the BLM receives the information promptly. Additional details regarding the appropriate information to file with the BLM can be obtained by reviewing the forms in Appendix 5, or contacting the Commission at 202-502-8836.

Exhibit drawings are filed in a variety of formats for review by the Commission. When filing drawings for review, applicants are generally not limited to the format of the drawing. Acceptable formats include paper, mylar, or electronic files of various formats such as PDF, JPG, color or black and white drawings. All drawings must conform to the regulatory requirements specific to the type of application filed. In addition, applicants are required to file GIS data so Commission staff can verify the location of project features and the project boundary. Once a drawing is approved by the Commission, approved copies must be filed in a specific format. Therefore, applicants should consider the Commission's approval standards when preparing exhibit drawings. Exhibit drawings that deviate substantially from this format may cause added effort for revisions.

EXHIBIT DRAWING DETAILS

Exhibit drawings are required for every hydropower project and are kept on file at the Commission. There are three basic categories of exhibit drawing information the Commission requires for hydropower projects:

- project works,
- project boundaries, and
- recreational facilities

All information on the drawings must be legible and conform to the standards and specifications under the regulations at 18 CFR §4.39; which describes:

- drawing size and scale and map features,
- aperture card specifications,
- requirement that drawings must be stamped by a registered land surveyor,
- requirement that drawings should be identified as CEII material,
- electronic filings

In addition, maps and drawings that contain project boundary information must conform to the standards and specifications under the regulations at 18 CFR §4.41; which describes:

- all projects must have a boundary and exhibits identify principal features,
- federal and non-federal lands must be identified,
- project boundary standards must be described,

- project boundary is required in a georeferenced electronic format
- land ownership identification is required (applicant owned in fee, to be acquired in fee, applicant rights to occupy, rights to occupy to be acquired)

Appendix 3 contains a sample of a properly prepared project boundary exhibit. Appendix 4 contains frequently asked questions and answers regarding specific details relating to the preparation of exhibit drawings.

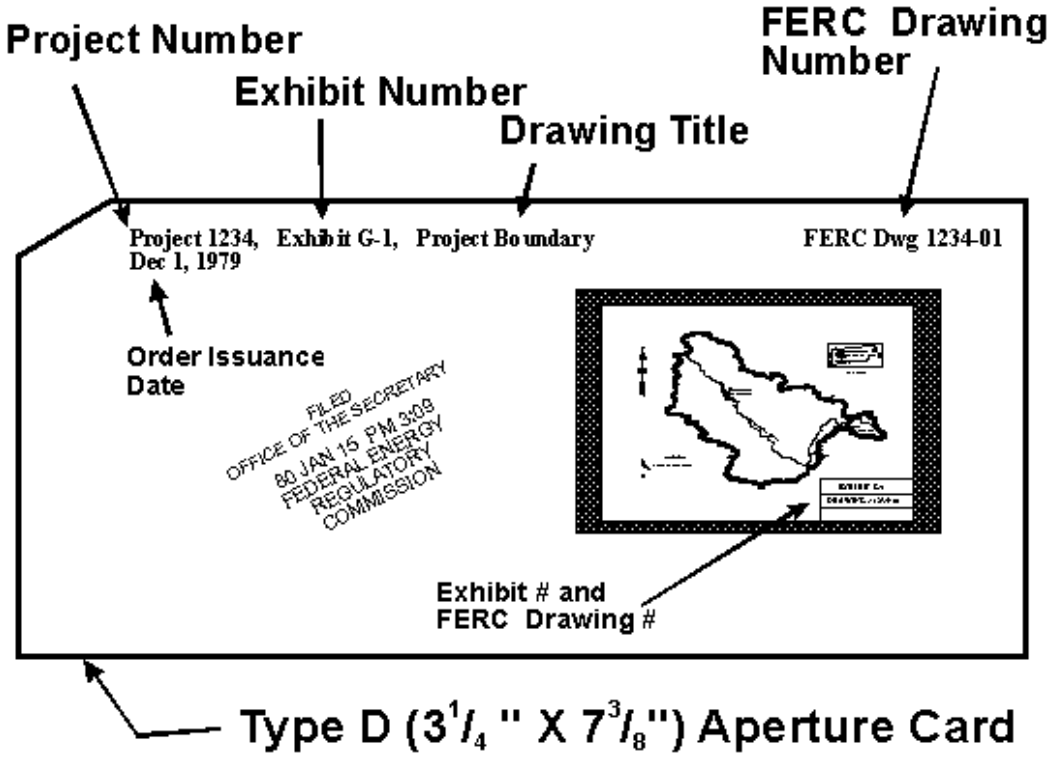
DRAWING FORMATS

All exhibit drawings must be legible and contain the required information to enable a full review of the proposed hydropower project. Paper drawings are the most common format and usually consist of engineer drawings at 24" x 36" (D size), but must not be smaller than 11 inches on their shorter side. Aperture card format refers to a microfilm copy of an approved exhibit drawing. Electronic file format refers to any type of raster file image that can be read on common computer systems. The Commission requires a specific electronic file format for *approved* copies of exhibit drawings.

Aperture Cards (Microfilm)

Aperture cards refer to microfilm copies of drawings in a specific format. Unlike its digital counterpart, microfilm is the product of a nearly static, tested technology that is governed by carefully crafted national standards. When created and stored according to these standards, microfilm boasts a life expectancy of 100 to 500 years compared to a maximum 25-year-lifespan for CD-ROM and other digital media. Microfilm is human-readable using only light and magnification, and therefore never becomes outdated, making microfilm the best solution for long-term archival storage. Details of the Commission's requirements for aperture cards are discussed in greater detail below.

Exhibit drawings are converted to aperture card format because they provide a durable medium for archiving information about a hydropower project's features and boundaries. For each exhibit drawing there should be a corresponding aperture card. The microfilm copies must contain an image of the approved exhibit drawing. Each aperture card must contain the exhibit drawing mounted on silver or gelatin 35mm microfilm mounted on Type D (3-1/4" x 7 -3/8") aperture cards. When an exhibit drawing needs to be reviewed, the microfilmed image can be easily viewed on a screen or enlarged and printed on paper to a working size. Typical information contained on the sample aperture card is shown in the following figure.



In transferring the exhibit drawing information to an aperture card, the card must be labeled with specific information such as project number, drawing number, and date of approval to allow for ease in filing and retrieval at a later date.

Electronic Cards (Raster Data)

The Commission has supplemented aperture cards with electronic drawing files. There are recognized benefits associated with permanent digital storage, including high-speed retrieval, electronic data transmission and communication, speed of drawings and faster initial drawing release. However, digital media content cannot be determined without substantial specialized technology that routinely becomes quickly outdated. Digital archival technology requires constant, expensive migration to keep up with technology or it becomes useless.

The Commission requires electronic copies of all drawings in a common, nonproprietary format identified as TIFF CCITT Group 4. This format minimizes file storage space on computer servers, and is universally read by most computer software. Aperture cards will continue to serve as archival project exhibit information.

Electronic versions of the Exhibit drawings are required by the Commission. They are usually filed on CD-ROM format. The CD should be labeled "**Project Maps and Drawings**". Exhibit F drawings must be segregated from other project information and identified as **(CEII) material under 18 CFR §388.112 and §388.113(c)**. Each exhibit drawing must be contained in a separate electronic raster file; which meets the following format specification:

FILE NAME – MUST use the format (including commas and dashes)
P-####-####, G-1, Project Boundary, MM-DD-YYYY.TIF
IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION –300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24" x 36" (min), 28" x 40" (max)
FILE SIZE – less than 1 MB desired

The filename for each drawing must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, FERC approval date, and file extension in the following format [P-1234-####, G-1, Project Boundary, MM-DD-YYYY.TIF]. If the file name is not in this format, the filing will be rejected.

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates), arranged in a triangular format for GIS georeferencing the drawing to the polygon data. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. The reference points must be based on a standard map coordinate system. In addition, each project boundary drawing must be stamped by a registered land surveyor.

Appendix 4 contains frequently asked questions and answers regarding specific details relating to the preparation of exhibit drawings. It is extremely important that project owners follow the requirements and specifications.

GIS DATA REQUIREMENTS

When reviewing or approving a hydropower project boundary, FERC staff uses a geographic information management (GIS) system to check project features and boundary information. GIS systems have made significant advances over the years and the industry has settled on several file formats that are interchangeable among systems. The Commission has adopted a flexible GIS standard that allows project owners to file GIS data in various formats.

All hydropower projects require a project boundary and require the project owner to have the necessary land rights to operate the project. Most hydropower projects have project boundary information at an accuracy required for property line surveys and real estate transactions. In addition to paper maps and drawings, the Commission requires project owners to file project boundary data in an electronic format that can be imported and checked in a GIS system. The Commission has adopted the National Map Accuracy Standards for reviewing this electronic hydropower project boundary data; which must be positionally accurate at a scale of 1:24,000 in a GIS system. This accuracy translates to ±40 feet positionally, and is not intended to replace the requirements for accurate project exhibit drawings, or for project owners to maintain accurate records of land ownership or easements associated with the project boundary or project operation.

Appendix 4 contains frequently asked questions and answers regarding specific details relating to the preparation of GIS polygon data for project boundaries and reservoir areas, and for point data regarding project features.

Project Boundary Data (Polygon/Point Data)

Project boundary data contained on Exhibit G drawings must be filed in a georeferenced electronic format such as ArcView shape files, GeoMedia files, MapInfo files, or any similar GIS format. The electronic boundary data must be positionally accurate to ± 40 feet and comply with the National Map Accuracy Standards for maps at a 1:24,000 scale. An electronic data file(s) is required for the project boundary, which identifies each project development as a separate polygon, and a separate file for the reference points. In addition, for those projects that occupy federal lands, a separate georeferenced file(s) is required that identifies transmission line acreage and non-transmission line acreage affecting federal lands for the purpose of meeting the requirements of 18 CFR §11.2. The file(s) must also identify the federal owners, land identification, and acreage affected by the project boundary. The project boundary file must include the same reference points shown on the individual exhibit Gs. For example, a project boundary point file created from three exhibit G files should contain a minimum of nine reference points. If an individual drawing contains more than one sectional drawing, then three reference points are required for each section. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be identified. The file name shall include: FERC Project Number, data description, FERC approval date, and file extension as shown in the sample below:

P-1234, boundary polygon data, MM-DD-YYYY.shp
P-1234, boundary polygon federal lands data, MM-DD-YYYY.shp
P-1234, reference point data, MM-DD-YYYY.shp

NOTE: all files in .shp format must be accompanied by files with the following extensions .dbf, .prj., and .shx

Depending on the GIS software used, all georeferenced polygon data (NOT point data) can be included in a single file with multiple layers.

Project Boundary Information (Text Data)

The project boundary data file(s) must be accompanied by a metadata text file that describes: the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American Datum 27, North American Datum 1983, etc.), and the units of measurement (i.e., feet, meters, miles, etc). The text file name shall include: FERC Project Number, data description, FERC approval date, and file extension in the following format [P-1234, project boundary metadata, MM-DD-YYYY.TXT]. These data

represent the spatial reference for the project and are necessary to locate the project boundary in a GIS system.

Project Feature Data (Polygon/Polyline/Point Data)

Locating and tracking project features and resources is an important part of managing a hydropower project. Many license article requirements require long-term tracking and reporting to verify compliance with a particular issue. Keeping track of recreational features is important because of the requirements to provide recreation opportunities at hydropower projects. Tracking cultural resource sites usually requires a management plan and preserves regional heritage. Finally, tracking the location of marinas, boat docks, and other non-project use of project lands helps to gauge overall demand for project related resources and will help to implement an effective water safety plan. GIS is a useful tool to track existing project related resources and develop new plans as required by license articles. Both licensees and FERC can benefit from tracking project features using GIS.

The Commission will track project resources and certain requirements through the use of GIS related data. For projects with a shoreline management plan (SMP), the licensee will need to provide GIS data on the project reservoir as well as shoreline management classifications that are approved as part of the SMP. When approving project recreational features, FERC will require a representative latitude/longitude location point of the feature. The quality of all GIS data should have the same positional accuracy required for the project boundary; which must be positionally accurate to at least ± 40 feet and comply with the National Map Accuracy Standards for maps at a 1:24,000 scale.

PROJECT APPROVAL

When a hydropower license or exemption is issued by the Commission, the appropriate exhibit drawings are approved and incorporated into the authorizing document. Only those exhibit drawings that are relevant to the hydropower project are approved by the Commission and assigned FERC drawing numbers. The authorizing license or exemption will contain a section specifying the exhibit drawings incorporated into the document. Older exemptions (1980's era) frequently incorporate by reference the exhibits submitted as part of the application. Project owners are required to file aperture cards of all approved exhibits drawings.

FILING REQUIREMENTS – APPROVED EXHIBITS

For each exhibit drawing approved by the Commission, aperture cards and electronic files must be filed. For approved exhibit G drawings, project boundary GIS data must be filed, and for approved recreation features on an exhibit R drawing or a shoreline

management plan, relevant GIS data must be filed. This includes all licensed and exempted hydropower projects. The license/exemption will also require the filing of project boundary aperture cards with the BLM if the project includes federal lands. In addition, for those projects on federal lands, Form FERC-587 must be filed with the Commission and the BLM. The following are examples of standard license articles/ordering paragraphs. Licensees should carefully read the approving article/paragraph for specific instructions that may relate to their project.

No Federal Lands Involved

Within 45 days of the date of issuance of this license/order, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" x 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-1234-### through P-1234-###) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, G-1, etc.), Drawing Title, and date of this License shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office.

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office. Exhibit F drawings must be segregated from other project exhibits, and identified as **(CEII) material under 18 CFR §388.113(c).** Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this License, and file extension in the following format [P-1234-####, G-1, Project Boundary, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24” x 36” (min), 28” x 40” (max)
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates). The points must be arranged in a triangular format for GIS georeferencing the project boundary drawing to the

polygon data, and must be based on a standard map coordinate system. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. In addition, each project boundary drawing must be stamped by a registered land surveyor.

c) The licensee shall file two separate sets of the project boundary data in a georeferenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format) with the Secretary of the Commission, ATTN: OEP/DHAC. The filing shall include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ±40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) shall include: FERC Project Number, data description, date of this License, and file extension in the following format [P-1234, boundary polygon/or point data, MM-DD-YYYY.SHP]. The data must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this License, and file extension in the following format [P-1234, project boundary metadata, MM-DD-YYYY.TXT].

Federal Lands Involved

Within 45 days of the date of issuance of the license/order, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

a) Four sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" x 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-1234-1001 through P-1234-###) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, G-1, etc.), Drawing Title, and date of this License shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards along with form FERC-587 shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office. The remaining set of aperture cards (Exhibit G only) and a copy of Form FERC-587 shall be filed with the Bureau of Land Management office at the following address:

State Director
Bureau of Land Management
City, State Zip
ATTN: FERC Withdrawal Recordation

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office. Exhibit F drawings must be segregated from other project exhibits, and identified as **(CEII) material under 18 CFR §388.113(c).** Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-1234-####, G-1, Project Boundary, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24" x 36" (min), 28" x 40" (max)
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates). The points must be arranged in a triangular format for GIS georeferencing the project boundary drawing to the polygon data, and must be based on a standard map coordinate system. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. In addition, each project boundary drawing must be stamped by a registered land surveyor.

c) The licensee shall file two separate sets of the project boundary data in a georeferenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format) with the Secretary of the Commission, ATTN: OEP/DHAC. The filing shall include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ±40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-1234, boundary polygon/or point data, MM-DD-YYYY.SHP]. The filing must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc), the map datum

(i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-1234, project boundary metadata, MM-DD-YYYY.TXT].

In addition, for those projects that occupy federal lands, a separate georeferenced polygon file(s) is required that identifies transmission line acreage and non-transmission line acreage affecting federal lands for the purpose of meeting the requirements of 18 CFR §11.2. The file(s) must also identify each federal owner (e.g., BLM, USFS, Corps of Engineers, etc.), land identification (e.g., forest name, Section 24 lands, national park name, etc.), and federal acreage affected by the project boundary. Depending on the georeferenced electronic file format, the polygon, point, and federal lands data can be included in a single file with multiple layers.

AS-BUILT EXHIBITS FOR NEW CONSTRUCTION

If a hydropower project approval includes authorization for new project features, a license article requires the licensee to file as-built exhibits with the Commission within 90 days of the date of completion of project construction. The exhibits are reviewed by FERC staff to make sure they match the as-built conditions, and to determine their compliance with the license. The terms and conditions of an exemption generally do not require the filing of as-built exhibits. However, the Commission will require updated exhibit drawings if the constructed features differ substantially from those authorized.

APPENDIX 1

Exhibit Guide to Regulatory Requirements

OEP Project Exhibit Drawing Requirements

Application for Preliminary Permits, Licenses, Exemptions: General Provisions
§4.39 Specifications for Maps & Drawings (Pg. 101)
§4.32(d) directs the filing of microfilm copies of required drawings (Pg. 80)
§4.41(h) provides instructions for georeferenced project boundary data (Pg. 110)

License Type	**Drawings** **Exh. F(L)**	**Boundary** **Exh. G(K)**	**Recreation** **Exh. R(E)**
§4.40 Major Unconstructed Major Modification	§4.41(g) - refer to specs, also see §4.39 Pg. 109	§4.41(h) - refer to specs, also see §4.39 Pg. 110	§4.41(f) dwgs conform to §4.39 Pg. 107
§4.50 Major Project Existing Dam	§4.51(g) - refer to specs at §4.41(g) Pg. 118	§4.51(h) - refer to specs at §4.41(h) Pg. 118	§4.51(f) - dwgs conform to §4.39 Pg. 117
§4.60 Minor/Major Project<5 MW	§4.61(e) - refer to specs at §4.41(g) Pg. 121	§4.61(f) - refer to specs at §4.41(h) Pg. 121	Maps as reqd - consult requirements of §4.41(f) Pg. 121
§4.70 Transmission Line unconstructed constructed	dwgs F, G, and E for unconstructed lines connected to a licensed project >5MW must meet req of §4.41, Pg. 122 dwgs F, G, and E for unconstructed lines connected to a licensed project < 5 MW, or any constructed line connected to a licensed project must meet requirements of §4.61, Pg. 122		
§4.90 Conduit Exemption	§4.92(f) - refer to specs at §4.41(g) Pg. 127	§4.92(d) - refer to specs at §4.41(h) pg. 127	prepare exhibit pursuant to §4.38 Pg. 127
§4.101 Exemption <5 MW	§4.107(f) - refer to specs at §4.41(g) Pg. 134	§4.107(d) - refer to specs at §4.41(h) Pg. 133	prepare exhibit pursuant to §4.38 Pg. 133
§4.81 Preliminary Permit	§4.81(E) dwgs identified as EXH 3, need not conform to precise specs of §4.39, must show boundaries, features, & land ownership Pg. 123-124		

Note: Page numbers refer to 18 CFR, updated April 1, 2011

APPENDIX 2

Selected Requirements from the Code of Federal Regulations

TITLE 18--CONSERVATION OF POWER AND WATER RESOURCES
CHAPTER I--FEDERAL ENERGY REGULATORY COMMISSION, DEPARTMENT OF ENERGY

PART 4_LICENSES, PERMITS, EXEMPTIONS, AND DETERMINATION OF PROJECT COSTS

PART 388--INFORMATION AND REQUESTS

PART 4_LICENSES, PERMITS, EXEMPTIONS, AND DETERMINATION OF PROJECT COSTS

Subpart D_Application for Preliminary Permit, License or Exemption: General Provisions

Sec. 4.39 Specifications for maps and drawings.

All required maps and drawings must conform to the following specifications, except as otherwise prescribed in this chapter:

(a) Each original map or drawing must consist of a print on silver or gelatin 35mm microfilm mounted on Type D (3-1/4" by 7-3/8") aperture cards. Full-sized prints of maps and drawings must be on sheets no smaller than 24 by 36 inches and no larger than 28 by 40 inches. A space five inches high by seven inches wide must be provided in the lower right hand corner of each sheet. The upper half of this space must bear the title, numerical and graphical scale, and other pertinent information concerning the map or drawing. The lower half of the space must be left clear. Exhibit G drawings must be stamped by a registered land surveyor. If the drawing size specified in this paragraph limits the scale of structural drawings (exhibit F drawings) described in paragraph (c) of this section, a smaller scale may be used for those drawings. Potential applicants or licensees may be required to file maps or drawings in electronic format as directed by the Commission. (b) Each map must have a scale in full-sized prints no smaller than one inch equals 0.5 miles for transmission lines, roads, and similar linear features and no smaller than one inch equals 1,000 feet for other project features, including the project boundary. Where maps at this scale do not show sufficient detail, large scale maps may be required.

(1) True and magnetic meridians;

(2) State, county, and town lines; and

(3) Boundaries of public lands and reservations of the United States [see 16 U.S.C. 796 (1) and (2)], if any. If a public land survey is available, the maps must show all lines of that survey crossing the project area and all official subdivisions of sections for the public lands and reservations, including lots and irregular tracts, as designated on the official plats of survey that may be obtained from the Bureau of Land Management, Washington, DC, or examined in the local land survey office; to the extent that a public land survey is not available for public lands and reservations of the United States, the maps must show the protractions of townships and section lines, which, if possible, must be those recognized by the Federal agency administering those lands.

(c) Drawings depicting details of project structures must have a scale in full-sized prints no smaller than:

(1) One inch equals 50 feet for plans, elevations, and profiles; and

(2) One inch equals 10 feet for sections.

(d) Each map or drawing must be drawn and lettered to be legible when it is reduced to a print that is 11 inches on its shorter side. Following notification to the applicant that the application has been accepted for filing [see Sec. 4.31(c)], prints reduced to that size must be bound in each copy of the application which is required to be submitted to the Commission or provided to any person, agency, or other entity.

(e) The maps and drawings showing project location information and details of project structures must be filed in accordance with the Commission's instructions on submission of Critical Energy Infrastructure Information in Sec. Sec. 388.112 and 388.113 of subchapter X of this chapter.

[Order 54, 44 FR 61334, Oct. 25, 1979. Redesignated by Order 413, 50 FR 11678, Mar. 25, 1985; Order 2002, 68 FR 51119, Aug. 25, 2003; 68 FR 61742, Oct. 30, 2003]

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PART 4_LICENSES, PERMITS, EXEMPTIONS, AND DETERMINATION OF PROJECT COSTS

Subpart E_Application for License for Major Unconstructed Project and Major Modified Project

Sec. 4.41 Contents of application.

Any application under this subpart must contain the following information in the form prescribed:

(a) Initial statement.

(b) Exhibit A is a description of the project. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain: . . .

; and

(6) All lands of the United States, including lands patented subject to the provisions of section 24 of the Act, 16 U.S.C. 818, that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey, by the best available legal description. The tabulation must show the total acreage of the lands of the United States within the project boundary.

(c) Exhibit B is a statement of project operation and resource utilization. If the project includes more than one dam with associated facilities, the information must be provided separately for each discrete development. The exhibit must contain: . . .

(d) Exhibit C is a proposed construction schedule for the project. The information required may be supplemented with a bar chart. The construction schedule must contain: . . .

(e) Exhibit D is a statement of project costs and financing. The exhibit must contain: . . .

(f) Exhibit E is an Environmental Report. Information provided in the report must be organized and referenced according to the itemized subparagraphs below. See Sec. 4.38 for consultation requirements. The Environmental Report must contain the following information, commensurate with the scope of the project: . . .

(g) Exhibit F consists of general design drawings of the principal project works described under paragraph (b) of this section (Exhibit A) and supporting information used as the basis of design. If the Exhibit F submitted with the application is preliminary in nature, applicant must so state in the application. The drawings must conform to the specifications of Sec. 4.39. . . .

(h) Exhibit G is a map of the project that must conform to the specifications of Sec. 4.39. In addition, to the other components of Exhibit G, the Applicant must provide the project boundary

data in a georeferenced electronic format--such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format. The electronic boundary data must be positionally accurate to ±40 feet, in order to comply with the National Map Accuracy Standards for maps at a 1:24,000 scale (the scale of USGS quadrangle maps). The electronic exhibit G data must include a text file describing the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., feet, meters, miles, etc.). Three sets of the maps must be submitted on compact disk or other appropriate electronic media. If more than one sheet is used for the paper maps, the sheets must be numbered consecutively, and each sheet must bear a small insert sketch showing the entire project and indicate that portion of the project depicted on that sheet. Each sheet must contain a minimum of three known reference points. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown. If at any time after the application is filed there is any change in the project boundary, the applicant must submit, within 90 days following the completion of project construction, a final exhibit G showing the extent of such changes. The map must show:

(1) Location of the project and principal features. The map must show the location of the project as a whole with reference to the affected stream or other body of water and, if possible, to a nearby town or any other permanent monuments or objects, such as roads, transmission lines or other structures, that can be noted on the map and recognized in the field. The map must also show the relative locations and physical interrelationships of the principal project works and other features described under paragraph (b) of this section (Exhibit A).

(2) Project boundary. The map must show a project boundary enclosing all project works and other features described under paragraph (b) of this section (Exhibit A) that are to be licensed. If accurate survey information is not available at the time the application is filed, the applicant must so state, and a tentative boundary may be submitted. The boundary must enclose only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources (see paragraph (f) of this section (Exhibit E)). Existing residential, commercial, or other structures may be included within the boundary only to the extent that underlying lands are needed for project purposes (e.g., for flowage, public recreation, shoreline control, or protection of environmental resources). If the boundary is on land covered by a public survey, ties must be shown on the map at sufficient points to permit accurate platting of the position of the boundary relative to the lines of the public land survey. If the lands are not covered by a public land survey, the best available legal description of the position of the boundary must be provided, including distances and directions from fixed monuments or physical features. The boundary must be described as follows:

(i) Impoundments. (A) The boundary around a project impoundment must be described by one of the following:

(1) Contour lines, including the contour elevation (preferred method);

(2) Specified courses and distances (metes and bounds);

(3) If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or

(4) Any combination of the above methods.

(B) The boundary must be located no more than 200 feet (horizontal measurement) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, except where deviations may be necessary in describing the boundary according to the above methods or where additional lands are necessary for project purposes, such as public recreation, shoreline control, or protection of environmental resources.

(ii) Continuous features. The boundary around linear (continuous) project features such as access roads, transmission lines, and conduits may be described by specified distances from center lines or offset lines of survey. The width of such corridors must not exceed 200 feet unless

good cause is shown for a greater width. Several sections of a continuous feature may be shown on a single sheet with information showing the sequence of contiguous sections.

(iii) Noncontinuous features. (A) The boundary around noncontinuous project works such as dams, spillways, and powerhouses must be described by one of the following:

(1) Contour lines;

(2) Specified courses and distances;

(3) If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or

(4) Any combination of the above methods.

(B) The boundary must enclose only those lands that are necessary for safe and efficient operation and maintenance of the project or for other specified project purposes, such as public recreation or protection of environmental resources.

(3) Federal lands. Any public lands and reservations of the United States (Federal lands) [see 16 U.S.C. 796 (1) and (2)] that are within the project boundary, such as lands administered by the U.S. Forest Service, Bureau of Land Management, or National Park Service, or Indian tribal lands, and the boundaries of those Federal lands, must be identified as such on the map by:

(i) Legal subdivisions of a public land survey of the affected area (a protraction of identified township and section lines is sufficient for this purpose); and

(ii) The Federal agency, identified by symbol or legend, that maintains or manages each identified subdivision of the public land survey within the project boundary; or

(iii) In the absence of a public land survey, the location of the Federal lands according to the distances and directions from fixed monuments or physical features. When a Federal survey monument or a Federal bench mark will be destroyed or rendered unusable by the construction of project works, at least two permanent, marked witness monuments or bench marks must be established at accessible points. The maps show the location (and elevation, for bench marks) of the survey monument or bench mark which will be destroyed or rendered unusable, as well as of the witness monuments or bench marks. Connecting courses and distances from the witness monuments or bench marks to the original must also be shown.

(iv) The project location must include the most current information pertaining to affected Federal lands as described under Sec. 4.81(b)(5).

(4) Non-Federal lands. For those lands within the project boundary not identified under paragraph (h)(3) of this section, the map must identify by legal subdivision:

(i) Lands owned in fee by the applicant and lands that the applicant plans to acquire in fee; and

(ii) Lands over which the applicant has acquired or plans to acquire rights to occupancy and use other than fee title, including rights acquired or to be acquired by easement or lease.

[Order 184, 46 FR 55936, Nov. 13, 1981; 48 FR 4459, Feb. 1, 1983, as amended by Order 413, 50 FR 11684, Mar. 25, 1985; Order 464, 52 FR 5449, Feb. 23, 1987; Order 540, 57 FR 21737, May 22, 1992; Order 2002, 68 FR 51119, Aug. 25, 2003; 68 FR 61742, Oct. 30, 2003; 68 FR 63194, Nov. 7, 2003; 68 FR 69957, Dec. 16, 2003]

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PART 388--INFORMATION AND REQUESTS

Sec. 388.112 Requests for privileged treatment of documents submitted to the Commission.

(a) Scope. (1) Any person submitting a document to the Commission may request privileged treatment by claiming that some or all of the information contained in a particular document is exempt from the mandatory public disclosure requirements of the Freedom of Information Act, 5 U.S.C. 552, and should be withheld from public disclosure.

(2) Any person submitting documents containing critical energy infrastructure information (CEII) as defined in §388.113 should follow the procedures specified in this section.

(b) Procedures. A person claiming that information warrants special treatment as CEII or privileged must file:

(1) A written statement requesting CEII or privileged treatment for some or all of the information in a document, and the justification for special treatment of the information; and

(2) The following, as applicable:

(i) An original plus the requisite number of copies of the public volume filed and marked in accordance with instructions issued by the Secretary;

(ii) An original plus two copies of the CEII volume, if any, filed and marked in accordance with instructions issued by the Secretary; and

(iii) An original only of the privileged volume, if any, filed and marked in accordance with instructions issued by the Secretary.

(c) Effect of privilege or CEII claim. (1) For documents filed with the Commission:

(i) The Secretary of the Commission will place documents for which privileged or CEII treatment is sought in accordance with paragraph (b) of this section in a nonpublic file while the request for privileged or CEII treatment is pending. By placing the documents in a nonpublic file, the Commission is not making a determination on any claim of privilege or CEII status. The Commission retains the right to make determinations with regard to any claim of privilege or CEII status, and the discretion to release information as necessary to carry out its jurisdictional responsibilities.

(ii) The Secretary of the Commission will place the request for privileged or CEII treatment and a copy of the original document without the privileged or CEII information in a public file while the request is pending.

(2) For documents submitted to Commission staff. The notification procedures of paragraphs (d), (e), and (f) of this section will be followed by staff before making a document public.

(d) Notification of request and opportunity to comment. When a FOIA or CEII requester seeks a document for which privilege or CEII status has been claimed, or when the Commission itself is considering release of such information, the Commission official who will decide whether to release the information or any other appropriate Commission official will notify the person who submitted the document and give the person an opportunity (at least five calendar days) in which to comment in writing on the request. A copy of this notice will be sent to the requester.

(e) Notification before release. Notice of a decision by the Commission, the Chairman of the Commission, the Director, Office of External Affairs, the General Counsel or General Counsel's designee, a presiding officer in a proceeding under part 385 of this chapter, or any other appropriate official to deny a claim of privilege, in whole or in part, or to make a limited release of CEII, will be given to any person claiming that the information is privileged or CEII no less than 5 calendar days before disclosure. The notice will briefly explain why the person's objections to disclosure are not sustained by the Commission. A copy of this notice will be sent to the FOIA or CEII requester.

(f) Notification of suit in Federal courts. When a FOIA requester brings suit to compel disclosure of information for which a person has claimed privileged treatment, the Commission will notify the person who submitted the documents of the suit.

[Order 630, 68 FR 9869, Mar. 3, 2003, as amended by Order 630–A, 68 FR 46459, Aug. 6, 2003; 72 FR 63985, Nov. 14, 2007]

NOTE: see also Commission Order No. 702, Critical Energy Infrastructure Information, Docket No. RM06-23-000, issued October 30, 2007, 121 FERC ¶ 61,107 (72 FR 63980, Nov 14, 2007)

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PART 388--INFORMATION AND REQUESTS

Sec. 388.113 Accessing critical energy infrastructure information.

(a) Scope. This section governs access to critical energy infrastructure information (CEII). The rules governing submission of CEII are contained in 18 CFR 388.112(b). The Commission reserves the right to restrict access to previously filed documents as well as Commission-generated documents containing CEII.

(b) Purpose. The procedures in this section are available at the requester's option as an alternative to the FOIA procedures in §388.108 where the information requested is exempted from disclosure under the FOIA and contains CEII.

(c) Definitions. For purposes of this section:

(1) Critical energy infrastructure information means specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure that:

(i) Relates details about the production, generation, transportation, transmission, or distribution of energy;

(ii) Could be useful to a person in planning an attack on critical infrastructure;

(iii) Is exempt from mandatory disclosure under the Freedom of Information Act, 5 U.S.C. 552; and

(iv) Does not simply give the general location of the critical infrastructure.

(2) Critical infrastructure means existing and proposed systems and assets, whether physical or virtual, the incapacity or destruction of which would negatively affect security, economic security, public health or safety, or any combination of those matters.

(d) Accessing critical energy infrastructure information. (1) An Owner/operator of a facility, including employees and officers of the owner/operator, may obtain CEII relating to its own facility directly from Commission staff without going through the procedures outlined in paragraph (d)(3) of this section. Non-employee agents of an owner/operator of such facility may obtain CEII relating to the owner/operator's facility in the same manner as owner/operators as long as they present written authorization from the owner/operator to obtain such information.

(2) An employee of a federal agency acting within the scope of his or her federal employment may obtain CEII directly from Commission staff without following the procedures outlined in paragraph (d)(3) of this section. Any Commission employee at or above the level of division director or its equivalent may rule on federal agency representatives' requests for access to CEII.

(3) A landowner whose property is crossed by or in the vicinity of a project may receive detailed alignment sheets containing CEII directly from Commission staff without submitting a non-disclosure agreement as outlined in paragraph (d)(4) of this section. A landowner must provide Commission staff with proof of his or her property interest in the vicinity of a project.

(4) If any other requester has a particular need for information designated as CEII, the requester may request the information using the following procedures:

(i) File a signed, written request with the Commission's CEII Coordinator. The request must contain the following: Requester's name (including any other name(s) which the requester has used and the dates the requester used such name(s)), title, address, and telephone number; the name, address, and telephone number of the person or entity on whose behalf the information is requested; a detailed statement explaining the particular need for and intended use of the information; and a statement as to the requester's willingness to adhere to limitations on the use

and disclosure of the information requested. A requester shall provide his or her date and place of birth upon request, if it is determined by the CEII Coordinator that this information is necessary to process the request. Unless otherwise provided in Section 113(d)(3), a requester must also file an executed non-disclosure agreement.

(ii) A requester who seeks the information on behalf of all employees of an organization should clearly state that the information is sought for the organization, that the requester is authorized to seek the information on behalf of the organization, and that all the requesters agree to be bound by a non-disclosure agreement that must be executed by and will be applied to all individuals who have access to the CEII.

(iii) After the request is received, the CEII Coordinator will determine if the information is CEII, and, if it is, whether to release the CEII to the requester. The CEII Coordinator will balance the requester's need for the information against the sensitivity of the information. If the requester is determined to be eligible to receive the information requested, the CEII Coordinator will determine what conditions, if any, to place on release of the information.

(iv) If the CEII Coordinator determines that the CEII requester has not demonstrated a valid or legitimate need for the CEII or that access to the CEII should be denied for other reasons, this determination may be appealed to the General Counsel pursuant to §388.110 of this Chapter. The General Counsel will decide whether the information is properly classified as CEII, which by definition is exempt from release under FOIA, and whether the Commission should in its discretion make such CEII available to the CEII requester in view of the requester's asserted legitimacy and need.

(v) Once a CEII requester has been verified by Commission staff as a legitimate requester who does not pose a security risk, his or her verification will be valid for the remainder of that calendar year. Such a requester is not required to provide detailed information about him or herself with subsequent requests during the calendar year. He or she is also not required to file a non-disclosure agreement with subsequent requests during the calendar year because the original non-disclosure agreement will apply to all subsequent releases of CEII.

(vi) If an organization is granted access to CEII as provided by paragraph (d)(4)(iii) of this section, and later seeks to add additional individuals to the non-disclosure agreement, the names of these individuals must be sent to the CEII Coordinator with certification that notice has been given to the submitter. Any newly added individuals must execute a supplement to the original non-disclosure agreement indicating their acceptance of its terms. If there is no written opposition within five (5) days of notifying the CEII Coordinator and the submitter concerning the addition of any newly-named individuals, the CEII Coordinator will issue a standard notice accepting the addition of names to the non-disclosure agreement. If the submitter files a timely opposition with the CEII Coordinator, the CEII Coordinator will issue a formal determination addressing the merits of such opposition.

(e) Fees for processing CEII requests will be determined in accordance with 18 CFR 388.109.

[Order 630, 68 FR 9870, Mar. 3, 2003, as amended by Order 630–A, 68 FR 46460, Aug. 6, 2003; Order 649, 69 FR 48391, Aug. 10, 2004; Order 662, 70 FR 37036, June 28, 2005; 71 FR 58276, Oct. 3, 2006; 72 FR 63985, Nov. 14, 2007]

NOTE: see also Commission Order No. 702, Critical Energy Infrastructure Information, Docket No. RM06-23-000, issued October 30, 2007, 121 FERC ¶ 61,107 (72 FR 63980, Nov 14, 2007)

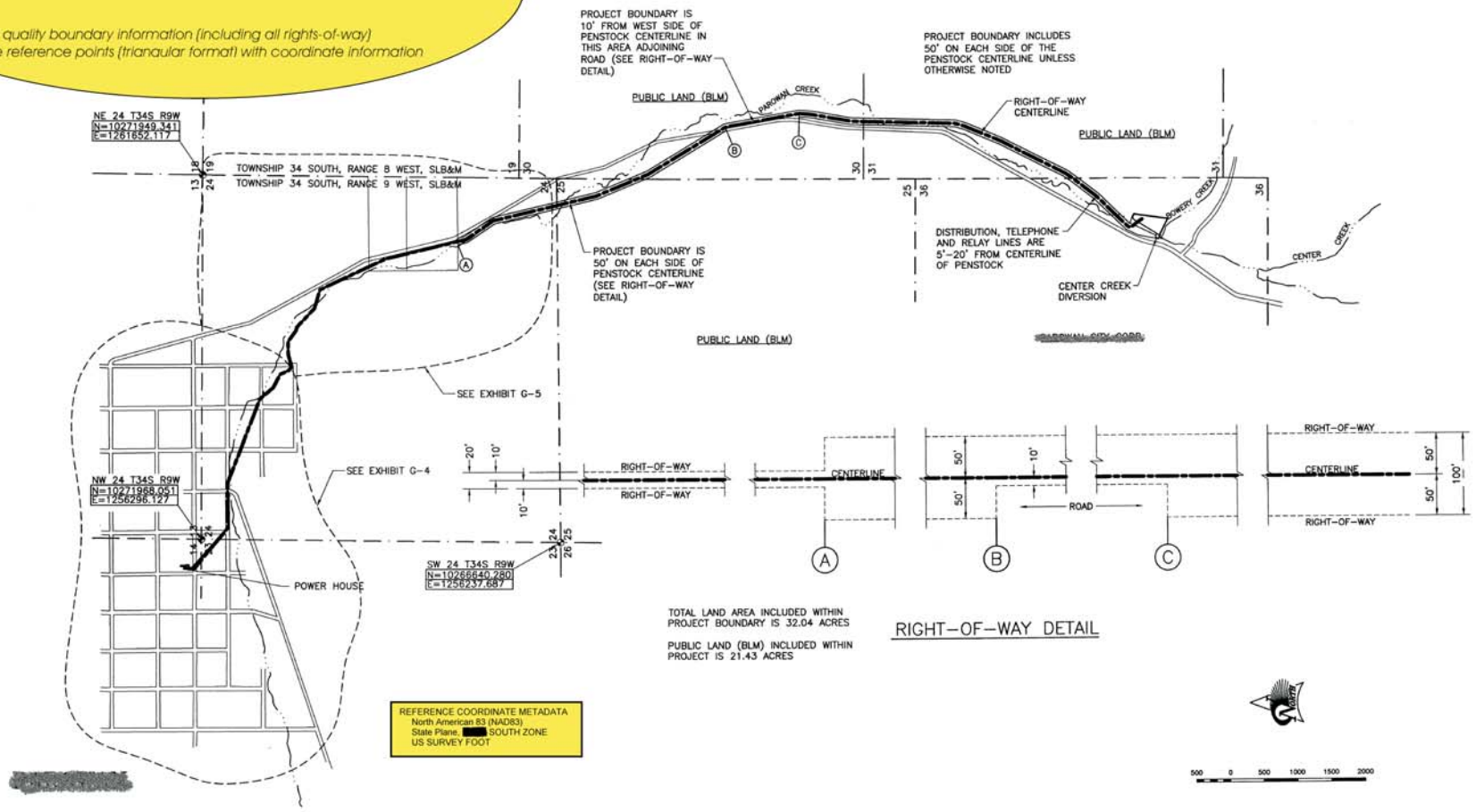
APPENDIX 3

Sample Project Boundary Drawing and GIS Data

SAMPLE ELECTRONIC APERTURE CARD

1-bit black & white TIF (sub format CCITT Group 4) raster image
36" X 23.3", resolution = 300 dpi, file size 220 kilobytes

NOTE: high quality boundary information (including all rights-of-way) three reference points (triangular format) with coordinate information



PROJECT AREA AND BOUNDARY

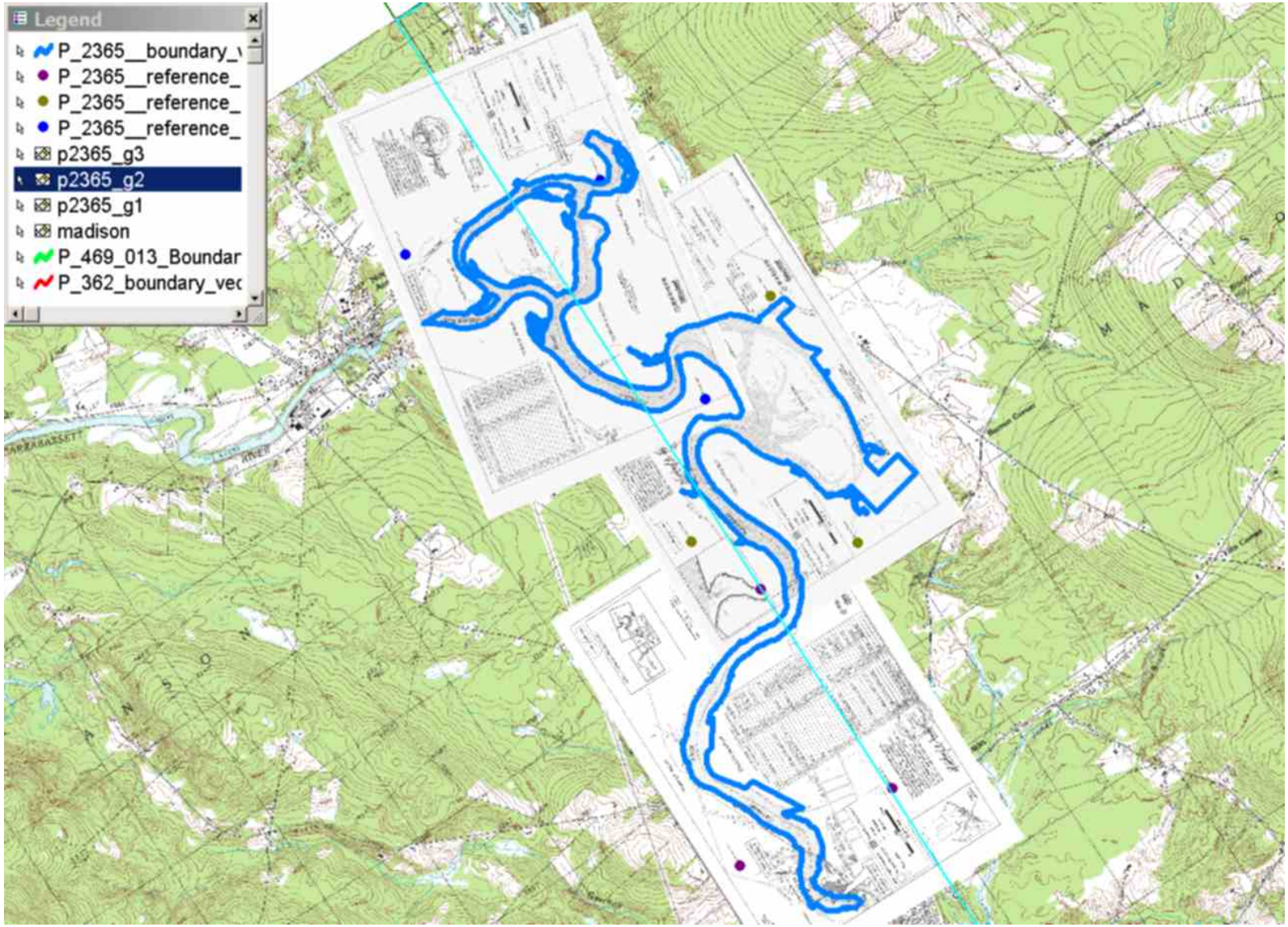
REVISIONS			
NO.	DATE	DESCRIPTION	BY
1			
2			
3			
4			
5			
6			
7			

ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS

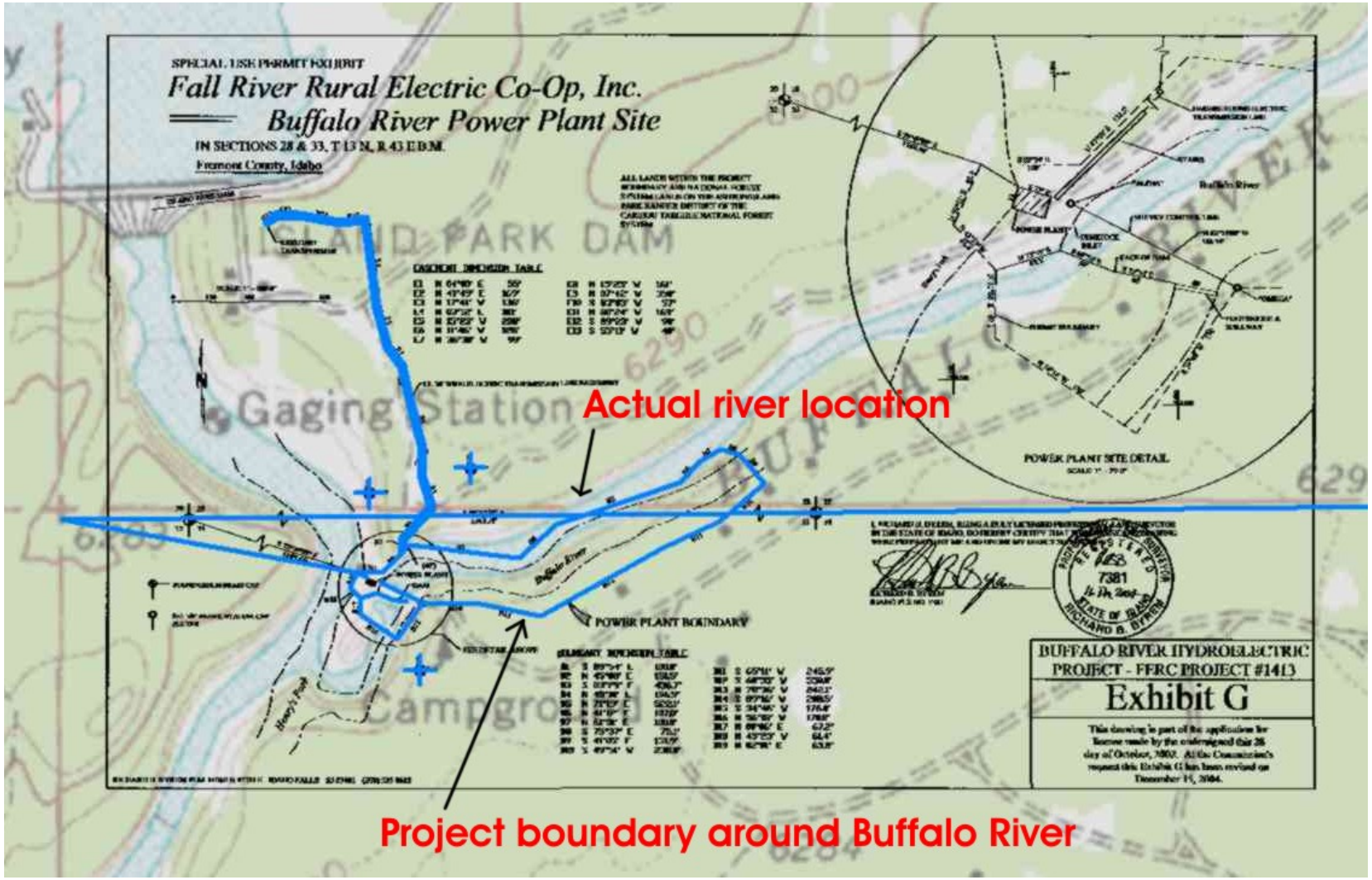
[redacted]
FERC NO. [redacted]
EXHIBIT G-3 - PROJECT RIGHT-OF-WAY

PROJECT NO. [redacted]		
DESIGNED [redacted]	CHECKED [redacted]	DRAWN [redacted]
DATE [redacted]		DRAWING NO. [redacted]
SCALE AS NOTED		SHEET NO.

[redacted]-1003



GIS vector data, GIS reference points (3 per drawing), and Exhibit G TIFF files imported, georeferenced and overlain to USGS 7.5–minute quadrangle map. When white background is eliminated from the exhibits, project boundary aligns properly within regulatory specifications. Note the project boundary is a “closed” polygon.



GIS vector data, GIS reference points, and Exhibit G TIFF file imported and overlain to USGS 7.5–minute quadrangle map. White background is eliminated from the Exhibit G, and project boundary does not align properly to features. It appears the drawing should be shifted west to align properly. Note the inset drawing also has three reference points as required.

SCHEDULE OF PROPERTY OWNERS

1	MARSEILLES HYDRO, LLC PO BOX 167, NESHKORO, WI 54941
2	AMEREN IP
3	RUSSELL & WILMA TATE 330 COMMERCIAL ST., MARSEILLES, IL 61341
4	MARSEILLES LAND & WATER CO., INC. 4132 S. RAINBOW #247, LAS VEGAS, NV 89103
5	SAM CARLINO 507 N. RAVEN AVE., SHOREWOOD, IL 60431
6	COMMERCIAL STREET ROW – CITY OF MARSEILLES
7	CHARLES & CAROLE BOLATTO 224 N. 2653RD RD., MARSEILLES, IL 61341
8	QUINTIN & ELMINA BROWN 239 BROADWAY ST., MARSEILLES, IL 61341
9	JARROD ETHERIDGE 206 AURORA ST., MARSEILLES, IL 61341
10	DAVID & BRIDGET WHEELER 295 AURORA ST., MARSEILLES, IL 61341
11	GOVERNMENT HEADGATE PROPERTY (SEE G-2)
12	ROBERT NEWKIRK 521 BROADWAY ST., MARSEILLES, IL 61341
13	NOT USED
14	PERRY CLARK 160 MILL ST., MARSEILLES, IL 61341
15	KENNETH VERLY 140 WALLACE ST., MARSEILLES, IL 61341
16	UTICA TRUST c/o ATTORNEY TIMOTHY CREEDON 501 STATE ST., OTTAWA, IL 61350
17	DENNIS & PAMELA MOUTRAY 1N 471 SHADE TREE LANE, MAPLE PARK, IL 60151
18	DYNESTY CUSTOM BUILDERS LLC – SCOTT OLSEN PO BOX 123, NEWARK, IL 60541
19	MTCO DEVELOPMENT LLC 220 N MENARD, METAMORA, IL 61548
20	
21	
22	
23	
24	

ACQUISITION LEGEND

- LAND OWNED BY MLWC
- TO BE PURCHASED FROM 1
- TO BE PURCHASED FROM 3
- TO BE PURCHASED FROM 5
- TO BE PURCHASED FROM 18
- TO BE PURCHASED FROM 19
- TO BE PURCHASED FROM INDIVIDUAL OWNERS

Exhibit G showing project boundary and listing of all land parcels acquired or to be acquired by the applicant as part of the license application. This drawing was prepared in accordance with 18 C.F.R. §4.41(h)(3)&(4). Remember, the final drawing will have to be converted to a black & white image and filed with the Commission in CCITT Group 4 TIFF file format. For this reason cross-hatch or stipple schemes should be used to ID the various land ownership rather than colors.

EXHIBIT G-5 5 OF 6

MARSEILLES LAND & WATER CO.

MARSEILLES LOCK & DAM PROJECT

PROPERTY ACQUISION MAP
ILLINOIS RIVER
MARSEILLES, ILLINOIS

12/28/2008

NORTH

NONE

APPENDIX 4

Frequently Asked Questions (FAQs) about Exhibits, GIS, and Electronic Drawings

Frequently Asked Questions (FAQs)

Preparing exhibit drawings for filing with the Commission requires attention to detail. If there is one advice statement we must emphasize about preparing and filing exhibits, it is to *check and verify all work*. This appendix provides questions and answers to a number of issues associated with exhibit drawings and related GIS data.

EXHIBIT DRAWINGS

Q. When preparing exhibit drawings for license or exemption applications or amendment filings with the Commission, what format is acceptable?

A. The most common drawing format for submitting exhibit drawings for FERC review is paper. Applicants may choose to file their exhibits as a full size drawing or in a reduced format (i.e., 11" x 17"). In addition, more applicants are filing exhibit drawings in electronic formats such as PDF, JPG images. These formats are acceptable for review, provided the maps and images are at a scale sufficient to show the necessary project details. However, upon approval by the Commission, the exhibits must be converted to black & white drawings and filed in large format. This means that aperture cards and TIFF files will have to be prepared using full size drawings.

Q. What information needs to be included on exhibit drawings?

A. All exhibit drawings must include basic information relating to project approved features as described in the regulations. Project boundary exhibits must show a "closed" project boundary that is clearly identifiable. In addition, project boundary exhibits must have a minimum of three reference points per "plan view detail" on the drawing along with the coordinates for these points. These points must be located around the project boundary in a triangular pattern that will allow importing and georectification in a GIS system. Project boundary exhibits must also include the GIS metadata information; which contains key information about the coordinate system. Refer to the sample drawings in Appendix 3 for more detail.

Exhibit F drawings contain critical energy infrastructure information (CEII), as defined under the Commission's regulations at 18 CFR §388.113(c) and should be labeled as such on the drawing. An Exhibit G drawing contains project location and boundary information, as well as project features such as the powerhouse, transmission line, and recreation features. However, if the drawing material contains design details about the project, a licensee may consider moving the information to an exhibit F drawing to provide CEII status. Additional details regarding CEII documents can be found on the Commission's web site at: http://www.ferc.gov/legal/ceii-foia.asp Finally, Exhibit R drawings are required to show details of approved recreational features. In general, these drawings are

not required to meet the geospatial standard requirements for Exhibit G's. However, the location of all approved recreation features must be identified on the Exhibit G.

Q. Explain the need for three reference points on Exhibit G drawings, and how they are used?

A. Three reference points are very important, and necessary for the Commission to import the exhibit drawing to its GIS system. The points are used to georeference the exhibit drawings and verify the project boundary polygon data matches what is on the drawing. It is very important to place the reference points around the exhibit in a triangular pattern. This way the drawing can be imported and properly georectified. Project owners have asked if the points need to be survey control monuments or location points established by a surveyor. NO. The points can be any reference point on the exhibit drawing and are typically the corner of a building, intersection of a road, or even unmarked space on the drawing. However, the reference points must be the same ones included in the GIS data and they MUST match when imported to the GIS system.

As an additional note, when Georeferencing exhibit drawings to a coordinate system licensees should avoid using the North American Datum (NAD) 1927. Using NAD 27 can produce reference errors when using GIS software programs. If there is a need to use NAD 27, checking all work is highly recommended before filing with the Commission.

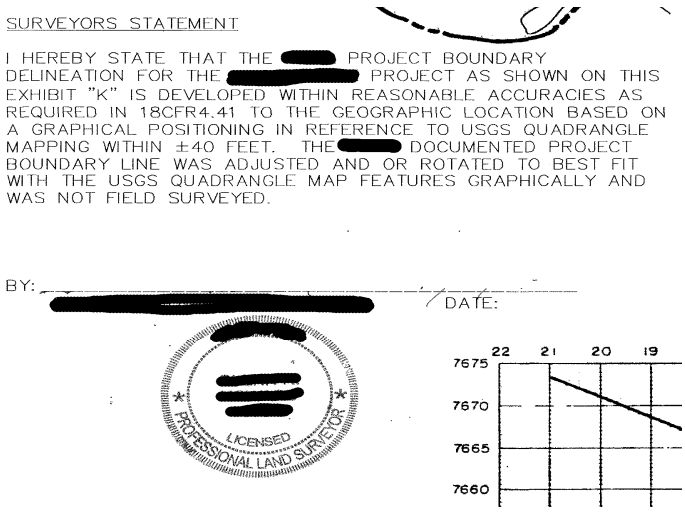
Q. Do I need to survey the project boundary?

A. NO. Many project owners and surveyors have interpreted the regulations as a mandatory requirement to undertake a boundary survey. All project owners are required to have the necessary land rights for their project boundaries, and surveys may be necessary related to real estate transactions when land is acquired and easements obtained for the project boundary, or various easements associated with project operations. Most hydropower project boundaries are developed using a combination of methods specified in the regulations (see Appendix 2, Sec. 4.41 (h)(2)) and probably required some associated survey work. However, a *new* survey is not necessarily required for the preparation of exhibit drawings.

If a project owner files project exhibits that, when reviewed on our GIS system, does not show an accurate location of the project boundary and project features, the owner will be required to revise the drawings. This may or may not require the assistance of a surveyor to properly locate the erroneous features.

Q. Why do project boundary drawings require a licensed surveyor stamp?

A. Hydropower project boundaries must be accurate. As discussed above, most if not all project boundaries were determined with the assistance of a surveyor at some point in time. In reviewing hundreds of projects on our GIS system, we discovered many errors in the location of project boundaries. Having a surveyor review and stamp the plans helps to ensure the drawings meet a *minimum* standard. While some surveyors have expressed concern about affixing their stamp to a project boundary exhibit, we are not aware of any projects that have been unable to receive a registered surveyor's stamp. We do not require the surveyor to be registered in the state where the project is located. The sample below shows a surveyor stamp format that includes language attesting to the level of review:


SURVEYORS STATEMENT

I HEREBY STATE THAT THE [redacted] PROJECT BOUNDARY DELINEATION FOR THE [redacted] PROJECT AS SHOWN ON THIS EXHIBIT "K" IS DEVELOPED WITHIN REASONABLE ACCURACIES AS REQUIRED IN 18CFR4.41 TO THE GEOGRAPHIC LOCATION BASED ON A GRAPHICAL POSITIONING IN REFERENCE TO USGS QUADRANGLE MAPPING WITHIN ±40 FEET. THE [redacted] DOCUMENTED PROJECT BOUNDARY LINE WAS ADJUSTED AND OR ROTATED TO BEST FIT WITH THE USGS QUADRANGLE MAP FEATURES GRAPHICALLY AND WAS NOT FIELD SURVEYED.

BY: [redacted] DATE:

LICENSED PROFESSIONAL LAND SURVEYOR

22 21 20 19
7675
7670
7665
7660

Q. The regulations require project boundary exhibit drawings to identify any public lands and reservations of the United States (federal lands), non-federal lands owned or to be acquired in fee by the applicant, and non-federal lands over which the applicant has acquired or plans to acquire the rights to occupy and use other than fee title, including the right to be acquired by easement or lease. Why must I show this detailed information on a proposed license application exhibit?

A. All project boundary exhibits must include sufficient information for the Commission to make an informed decision about project related impacts, including land ownership. In addition, when a hydropower project is authorized, the licensee/exemptee's right to use must encompass all project purposes under Section 10(a) of the Federal Power Act. A licensee must acquire title in fee or the right to use in perpetuity all lands within the project boundary. Standard article 5 is included in each license to addresses this right to use, and allows the licensee five years from the date of license issuance to acquire these rights for operation and maintenance of the project. If necessary, Section 21 of the Federal Power Act provides the licensee with eminent domain authority to acquire these rights. Applicants for a 5-MW exemption are required to possess, or have the option to obtain, the real property interests necessary to develop, operate, and maintain the project (see 18 CFR §4.31(b)(2)(ii)). Applicants for a conduit exemption are

required to prove, at the time of filing, there are sufficient property rights to construct, operate, and maintain the project (see 18 CFR §4.92(a)(3)). Identifying property rights information on the exhibit G drawings is the most effective way to identify the licensee/exemptee's responsibilities, and to monitor which lands it may need to acquire. If a licensee/exemptee needs to acquire project lands through the original license, relicense, or amendment process, we will expect to see those lands explicitly identified on the exhibit drawings. If the licensee has previously obtained all necessary land rights within the project boundary, we may accept a note on the exhibit drawings that includes language attesting to the level of property rights. One form of language that may be acceptable is shown below:

I HAVE REVIEWED THE [redacted] PROJECT BOUNDARY SHOWN HEREIN. THE LICENSEE EITHER OWNS IN FEE SIMPLE OR POSSESSES FLOWAGE EASEMENTS OVER ALL LANDS SHOWN ON THIS MAP THAT ARE INSIDE THE PROJECT BOUNDARY. THE PROJECT BOUNDARY LINES THAT ARE NOT CONTOUR LINES (I.E. ACCESS AREAS AND DAMS) WERE BASED ON [redacted] SURVEYS AND RECORDED SURVEYS AND DEEDS OF RECORD.

Q. The regulations require the project boundary around an impoundment or noncontiguous features be described by, among other methods, specified courses and distances. Adding this information to project drawings is very time consuming. Will the Commission accept latitude/longitude points in conjunction with a reference grid as a substitute for the course and distance method of boundary designation on the drawings?

A. All project boundaries must include enough information that will allow platting of the boundary. Moreover, it is the project owner's responsibility to have all the necessary land rights within the project boundary. Prior to GIS systems, the most common way to define surveyed boundaries was to label drawings with courses and distances. This method is still required for most real estate transactions that involve property line survey work. The course and distance (also known as metes and bounds) method for determining a project boundary should be very accurate because, in theory, it requires a survey control point (or marker) to begin the process. A survey control marker provides an established, verifiable horizontal/vertical position that is then used as a fixed reference in positioning and correlating map features. Because these survey control markers can be accurate to within hundredths of a foot, the accompanying course/distance data is expected to have similar accuracy.

With the advent of GIS, there are many cost-effective options available that allow the designer to locate the project boundary of a hydropower project. It is possible to locate all points around the project boundary in one of many coordinate systems, from which courses and distances can be determined. While the Commission may consider latitude/longitude points in conjunction with a reference grid on the exhibit drawing as an alternative to courses and distances, it must be assured the same level of accuracy as the regulations require. Sufficient notes must be added to the drawings to provide this assurance, and the drawings should include a description of survey control markers used to help define the project boundary, a description of the methodology used to develop the latitude/longitude data, and a description of the level of accuracy for the project

boundary. All project boundary drawings must be accompanied by GIS data that will allow the Commission to check the project boundary location. In addition, if the drawings use the latitude/longitude points with a grid system the project owner may be required to provide course and distance information if requested by the Commission. These provisions should provide flexibility to project owners, while maintaining adequate standards for project boundaries.

Q. I have a small hydro project and the requirements for drawings seem very burdensome. Is there any way I can get a waiver?

A. All project exhibits ***must*** meet minimum standards. For example, Exhibit F drawings contain details regarding the design of the powerhouse, generating units, and appurtenant facilities related to power production. Exhibit G drawings show the project boundary and principal features as a whole in relation to the affected waterway and other permanent geographical features such as roads, rivers, and other structures that may be found on a map and easily recognized in the field. All drawings must be drawn to scale, must be legible, and must contain a title block with pertinent project information. However, the Commission recognizes that certain projects will be of such a small size that it may be possible to relax some of the requirements for maps and drawings while achieving the same level of detail regarding a) the location of the project and the extent of land area impacted by the project works, and b) the proposed design of all power producing structures and equipment. All exhibit drawings must be of a quality, and contain enough detail for Commission staff to review and make decisions regarding project impacts to the surrounding environment. Projects that may qualify for a waiver are 5-MW exemptions and conduit exemptions. Any waiver of exhibit requirements granted by the Commission will be project specific.

Exhibit F drawings must be of sufficient quality, clarity, and detail to identify the project features. This would include the inlet structure, powerhouse and tailrace, generating equipment, as well as a site plan and profile views. If turbine and generator drawing details are available from manufacturer specification books, they may be substituted for an original prepared drawing providing they fully represent the proposed project. Providing all details are legible, applicants may request a waiver to prepare the drawings on sheets not smaller than 8 ½ by 11 inches, or to use a different scale for sections and details.

Exhibit G drawings must include a vicinity map of the project area, and a detailed drawing that shows all principal features as a whole in relation to the affected waterway and other permanent geographical features. All project facilities must be contained within a project boundary. The drawings must be drawn to scale, contain a north arrow, and contain a location data points such that the project site identified using a defined coordinate system such as latitude/longitude. In addition, exhibit G drawings must show land ownership as required by 18 CFR §4.41(h). Providing the proposed project is contained within a small footprint (including transmission line) and does not affect federal lands, applicants may request a waiver for certification of the drawing by a registered land surveyor.

APERTURE CARDS

Q. Aperture cards are an outdated format. Why does the Commission continue to require approved drawings to be filed in aperture card format?

> **A.** Aperture cards (or microfilm media) continue as one of the most convenient archival formats. The key word is "archival." While technology is moving forward with digital formats, microfilm is a durable, tested technology that boasts a life expectancy of 100 to 500 years. In addition, microfilm is human-readable using only light and magnification, and therefore never becomes outdated, making microfilm the best solution for long-term archival storage. Hydropower projects have been under FERC jurisdiction since 1920, and therefore many archived aperture cards are more than 80 years old and are in excellent condition. The Commission plans to continue to require aperture cards for archival purposes, but has also made provisions for providing electronic copies of exhibit drawings.

Q. What can I do if I cannot find a company to provide aperture cards?

> **A.** There are numerous companies that provide aperture card services. Most are dedicated towards the engineering profession. Some of the largest corporations store their documents on aperture cards, including the electric utility industry, the Department of Defense, and the aircraft design industry. A quick search on the Internet will result in companies that can provide aperture card services.

ELECTRONIC EXHIBITS (TIFF FILES)

Q. If the Commission plans to continue requiring aperture cards, why implement a new standard that requires electronic images of exhibit drawings?

> **A.** As discussed above, aperture cards will be used primarily for archiving purposes. On a day-to-day basis, exhibit drawings will be used via electronic format to facilitate efficiency. The Commission has adopted a generic file format standard that should minimize the cost to project owners. Drawings must be black and white graphic files that use a TIFF format, CCITT Group 4 compression. This format minimizes computer storage space while maximizing the quality of the drawing features. Any drawings not received in this format will be rejected by the Commission.

Q. My project drawings were created on a CAD system and use various colors to show project features. Why is this format not adequate?

> **A.** Creating files and drawings in multiple colors may be an excellent solution for project owners to readily identify project features. It can allow for the use of color coding formats to identify project features or other information. However, when output to electronic file formats, color drawings formats occupy tremendous storage space and are slow to travel over computer networks. These solutions are not necessarily efficient for managing large amounts of data at a national level or

for large corporations. Combining black and white drawings with various shading or cross-hatch schemes is just as effective as color in displaying important project information.

Licensees are experimenting with the use of orthophotographs as a backdrop on which map features can be overlaid on a CAD system. Orthophotos have the positive attributes of a photograph such as detail and timely coverage, and the positive attributes of a map including uniform scale and true geometry. Orthophotos are created by scanning aerial photographs and converting them into a raster image file format. However, orthophotos do not convert well to a TIFF CCITT Group 4 image because they are either color or gray scale images. Licensees should be cautious in using orthophotographs to create Exhibit G drawings. Exhibits that convert to poor quality TIFF files, or result in excessive file sizes will be rejected.

Q. What are the common problems the Commission encounters with filed electronic images?

A. Most of the problems are related to a lack of quality control. We have found errors with drawings filed with the Commission, in the following order of frequency:

- *Wrong file format name.* All electronic files MUST follow the format specified in the requirements. The Commission uses software to index and retrieve all exhibit drawing images. The software requires the specific format described in each order approving exhibit drawings.
- *Wrong raster file format.* Images MUST be saved as black & white images in a TIFF CCITT Group4 compression format (no LZW b/w compression, no Huffman RLE compression, no color images, and no PDF files). The TIFF CCITT Group4 format produces the highest quality image with the least amount of storage space. Many project owners do not take the time to check their work before filing the images with the Commission.
- *Image size.* Images MUST be a minimum of 24" x 36". This size will result in the highest quality when printed in hard copy.
- *Fuzzy image.* Images MUST have a minimum resolution of 200 dpi for acceptable quality. Higher resolutions may be necessary when the quality of the native drawing is poor, but should not exceed 300 dpi unless absolutely necessary.
- *No data.* The Commission has received CDs with missing data, or in some cases, no data at all. In addition, we have received CDs that were created with specialized software and cannot be opened. All project owners should check their data on a separate computer before filing with the Commission. In addition, filers must AVOID using regular mail service. All incoming mail is screened with equipment that damages magnetic and digital media.

GIS INFORMATION

Q. What format can project owners use to file project boundary polygon/point data?

A. The regulations are fairly clear about the GIS data required by the Commission, and most GIS systems can import data in various formats. The Commission uses an ESRI geodatabase for its GIS system and can also easily import properly coded GeoMedia files. With a little more effort we can also import MapInfo, MicroStation, and AutoCAD Map files. When supplying GIS data to the Commission it is important to include all necessary data files. ESRI GIS data is composed of four separate files (.shp, .shx, .dbf, and .prj) and the boundary is made up of individual vector lines. **However, because the project boundary is a closed polygon or area, GIS data needs to be filed in this format.** Project owners may want to include additional information such as aerial photographic images, geoTIFF images, or similar maps if they help to provide additional verification of project features.

It is important that each polygon in the polygon data table include details regarding the owner, acreage, and whether the acreage is associated with the project transmission line. Similarly each reference point in the point data table should include the exhibit number, reference point ID for that sheet, and coordinates for the data point. Sample data tables are shown below:

Boundary Point Data Table

ID	Point_No.	North_DD	West_DD
0	G1-1	38.8711	-121.6317
1	G1-2	39.8514	-121.6103
2	G1-3	39.8533	-121.6344
3	G2-1	39.8220	-121.6267

Federal Lands Polygon Data Table

ID	Location	Owner	Trans_Line	Acreage
0	T22 R3 S4	BLM	YES	5.21
1	T22 R3 S4	USFS Lassen NF	YES	14.2
2	T23 R3 S10	BLM	NO	100.09
3	T25 R4 S26	BLM	NO	1.78

Q. What format can project owners use to file project feature polygon/polyline/point data?

A. Since the project reservoir is a closed polygon area, the GIS data needs to be filed in polygon format. In general, the reservoir area required is associated with the operating water level described in the license. This level should reflect the normal maximum water surface elevation for the reservoir. A separate polygon

should also be provided for the tailrace area below the reservoir and within the project boundary. The licensee should identify the elevation and datum of the reservoir polygon file. When the Commission approves a shoreline management plan, we will require GIS polyline data associated with classifications of shoreline use. Each polyline should be along the shoreline associated with the reservoir and represent a linear classification of shoreline use. Finally, point data for project features should be filed as a latitude/longitude point that best represents the location of each feature being identified. If the licensee is using a GIS system to manage the project, these points can be easily obtained. Otherwise, inexpensive GPS receivers typically have an accuracy sufficient to meet the Commission's requirements. The point should be along the shoreline for a water related activity, and may be inland for land based features associated with the project. Sample attribute data table for polygon, polyline , and point data are shown below:

Reservoir Polygon Data Table

ID	Reservoir	Elev	Datum	Notes
0	Rainbow	950.3	NGVD 29	reservoir
1	Rainbow	902.2	NGVD 29	tailwater
2	Burnt Creek	455.7	MSL	reservoir
3	Hobo	1290.2	MSL	reservoir
4	Holebrook	602.7	NAVD 88	reservoir

Shoreline Classification Polyline Data Table

ID	Reservoir	Location	Shoreline_Classification	Length
0	Rainbow	G-2	Environmental Management	45.5
1	Rainbow	G-3	Residential	15.8
2	Rainbow	G-2	Public Recreation	3.5
3	Rainbow	G-1	Project Operations	1.12
4	Rainbow	G-7	Commercial	.03

Recreation Feature Point Data Table

ID	Development	Rec_Feature	Notes
0	Rainbow	boat launch	Kearny Rapids
1	Burnt Creek	boat launch	Swan River
2	Rainbow	camp ground	
3	Burnt Creek	tailwater fishing	

Q. Explain what the Commission does with the GIS information that is filed?

A. To understand what the Commission does with the information requires an understanding of the process. First, Commission staff review all electronic drawing files for acceptability (i.e., required information and drawing clarity). Next we import the GIS data to our system. Then, the reference point data file is used to import each exhibit drawing TIFF file to our GIS system. We georeference the drawing and expect the project boundary on the TIFF file to match exactly

with the polygon data. We also expect the reference points to match exactly with those on the exhibit drawings. If the project occupies any federal lands, we import the federal land polygon data and check against the exhibit information for accuracy. We use 1:24,000 USGS quadrangle maps plus digital ortho photos (DOQs) to check project boundary and location of project features. All information is stored in a project boundary geodatabase.

The Commission's regulations specify the preparation of GIS project boundary data must be accurate to 1:24,000; which translates to ±40 feet. However, since the project boundary drawings are based on more accurate standards, if prepared properly they should be very accurate when viewed on a GIS system. Therefore, if the GIS polygon data matches exactly with the exhibit G drawing it will be more accurate than 1:24,000.

Commission staff will use the GIS data for recreational, shoreline management, and project features to verify compliance with license articles. In addition, as applications are received for project related activities, or non-project use of project lands, we will use the GIS data as a review tool to verify consistency with approved land uses and facilitate the license amendment process. Finally, compiling project data in a spatial format will facilitate future resource planning.

Q. What are the common problems the Commission encounters with filed GIS information?

A. As mentioned above, the most common problem with GIS data is missing files. We also find errors with drawings filed with the Commission, in the following order of frequency:

- *Missing data files.* Each GIS data file needs to be accompanied by polygon data, point data, and metadata. In addition, if the project is on federal lands, separate polygon data must be filed for the portion of the project on federal lands.
- *GIS data are not properly georeferenced.* Project owners should always make sure the GIS data will import to the proper spatial location. In some cases, we have received GIS data that have located hydropower projects in the middle of the Pacific or Caribbean oceans, or in Canada.
- *Boundary orientation to exhibit drawing.* The Commission uses the project boundary reference point file to import the electronic exhibit files (TIFF files) and check them against the boundary polygon file. A project boundary polygon file and point file must match exactly to the exhibit drawing file. A failure to match means the vector file is incorrect or the exhibit drawing is not accurate.
- *Boundary/exhibit orientation to quad and ortho photo maps.* After making sure the project boundary polygon and point data match exactly with the exhibit image, Commission staff checks to make sure the project is accurate to a scale of 1:24,000. Project owners may use their own aerial photography or more accurate information to verify the location of project

boundary and should supply any supporting information to ensure accuracy.

Q. I do not have a GIS system and must outsource the preparation of project boundary exhibits and the associated GIS work. Before I make a filing with the Commission, how can I be sure the files created by my contractor are accurate and will meet the Commission's requirements?

A. Since you do not have a GIS system, the best way to check any work performed by others is to request screen snapshots of the GIS work. We found this is a very effective way to communicate issues such as project boundary alignment with the USGS quadrangle maps or DOQs, incorporation of adequate reference points, and alignment between the Exhibit Gs and the polygon data. In addition, you should make a checklist of the data files necessary for the CD you will be filing with the Commission.

Q. How does FERC intend to use the GIS data filed for project boundaries?

A. The Commission imports project boundary data in two forms: a) entire project boundary, and b) federal land parcels. GIS data are used to track hydropower resources throughout the country, and specifically those projects located on federal lands. Project boundary information is used in conjunction with other GIS resource data and assists Commission staff in project related reviews and resource assessments. Because the GIS data are only accurate to a scale of 1:24,000, we do not use the information to replace project boundary information or details that are supplied by project owners with a description of the project. In addition, we do not consider the GIS data as a substitute for legal boundary surveys.

Q. I am having trouble creating GIS data in a reasonable time frame for filing with the Commission. Also, I am receiving cost estimates that vary widely between vendors. What can I do?

A. Commission staff are available to assist all licensees in meeting their filing requirements. Licensees are encouraged to provide draft GIS data files for informal guidance throughout the review process. In general, staff provides guidance to licensees and their consultants so there are no surprises when an order is issued. After an order is issued, if a licensee is having difficulty meeting a filing date for a valid reason, an extension of time to file exhibits and GIS data may be granted.

Finally, we agree that contractor costs to comply with the Commission's exhibit and GIS data requirements may be high. However, it has been our experience that high costs are associated with consultants who may not fully understand the Commission's requirements. Our staff work with many licensees and consultants to facilitate the entire process of creating project exhibits and GIS data. If done properly, using a GIS based system to create these documents will save money over the longer term, especially for projects with resource tracking requirements,

or where there is development activity in and around reservoir areas. Licensees are encouraged to contact Commission staff for tips on how to keep exhibit and GIS data costs to a minimum.

APPENDIX 5

FERC Form 587

INSTRUCTIONS FOR COMPLETING FORMS FERC-587

Form FERC-587 is issued to identify those project boundary maps associated with federal lands. There are two versions of the form to account for the two different ways land is surveyed in the United States, the Public Land States and the Non-Public Land States. The Public Land States version is used for projects located on the western side of the United States, and is based on the Federal Township and range system. The Non-Public Land States version is to be used for most of the projects located on the eastern side of United States, including Texas, and is based just on county information.

To complete either form you must:

1. Identify the boundary maps in the license, preliminary permit, or in the application for license, amendment of license, or preliminary permit.

2. Provide the project number assigned by FERC. Type or print legibly when entering information on the form. Include your signature, and date completing the form.

3. Microfilm copies of the project boundary maps must be submitted with the land description forms as directed by FERC. Each map must be reproduced on silver or gelatin 35 mm microfilm mounted on type D (3-1/4" X 7-3/8") aperture cards. The project number followed by a hyphen and sheet number or letter must be typed on the front of each card in the upper right corner.

4. Mail a copy of the completed land description forms and aperture cards to:

Secretary
Routing Code PJ-12
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Another copy of the form FERC-587 must be filed with the Bureau of Land Management state office(s) involved using the format below. Go to the following internet address to get mailing address for a particular State Office (http://www.blm.gov/nhp/directory/index.htm).

State Director
Bureau of Land Management
City, State Zip
ATTN: FERC Withdrawal Recordation

5. Keep the land description forms and project boundary drawings up-to-date. If the project boundary changes, revised land description forms and drawings must be provided to the Commission immediately. The revised land description forms must be fully completed so as to supersede (not supplement) earlier forms. Mail updates in accordance with instruction 4.

If there are any questions, please contact the FERC at (202) 502-8836.

6. Where to send comments on the Public Reporting Burden. The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing the instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any aspect of this collection of information, including suggestions for reducing this burden, to the Federal Energy Regulatory Commission, 888 First Street., Washington, DC 20426 (Attention: Mr. Michael Miller, ED-30); and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503 (Attention: Desk Officer for the Federal Energy Regulatory Commission). This is a mandatory information collection requirement.)

To complete the Public Land States (Rectangular Survey System Lands) you need to:

1. Identify the state in which the project is located. If the project lies within multiple states, then provide the state for the township which the form refers.

2. Provide the FERC Project Number assigned by FERC (i.e., P-96). Only one project number should appear on the form.

3. Identify the Township, Range and Meridian where the project lands and federal lands overlap. Each township is depicted in a map by an identifying number according to where it falls (i.e. T9SR22E). The east/west numbers are identified by the term "Range" and the north/south numbers are identified by the term "Township". The completed land description form will identify the sections of the township affected by the project (both federal and non-federal lands) and provide references to the maps that show the project boundary in those sections. Complete a separate form for each township identified, regardless of the ownership status of the lands.

4. Identify whether you are completing the form for a licensed project or a preliminary permit. Identify whether the license is pending or issued. Provide an expiration date in case of a preliminary permit.

5. Using the township grid provided on the form, identify the section (s), in which the federal land is located on the map. Every Section is numbered, from 1 to 36, depending upon its position within the township. Specify the exhibit sheet (drawing) number, or letter within the appropriate township section. If the FERC sheet numbers have been assigned, they must be used on the land description forms. In those cases where FERC has not assigned sheet numbers, assign letter designations A, B, C, etc., in lieu of FERC sheet numbers. Permittees and permit applicants must assign letter designations since FERC does not assign sheet numbers for permits. The sheet numbers or letters are to be entered in the appropriate place on the land description forms to provide references to the maps. (i.e., if sheets 74 and 75 show the project boundary in sections 13 and 24 of a township, the numbers 74 and 75 would be inserted in the box on the land description form representing sections 13 and 24).

6. Provide the name and telephone number of the person completing the form, and the date the form is submitted.

Form FERC-587
OMB No. 1902-0145
(Expires 07/30/2012)

LAND DESCRIPTION

Public Land States
(Rectangular Survey System Lands)

1. STATE_____ 2. FERC PROJECT NO. _____

3. TOWNSHIP _____ RANGE _____ MERIDIAN _____

4. Check one:

_____License
_____Preliminary Permit

Check one:

_____Pending
_____Issued

If preliminary permit is issued, give expiration date:_____

5. EXHIBIT SHEET NUMBERS OR LETTERS

Section 6	**5**	**4**	**3**	**2**	**1**
7	**8**	**9**	**10**	**11**	**12**
18	**17**	**16**	**15**	**14**	**13**
19	**20**	**21**	**22**	**23**	**24**
30	**29**	**28**	**27**	**26**	**25**
31	**32**	**33**	**34**	**35**	**36**

6. contact's name _____

telephone no. (_____)

Date submitted _____

This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under Section 24 of the Federal Power Act.

To complete the Non-Public Land States (Non-Rectangular Survey System Lands in Public Land States) form you need to:

1. Identify the state in which the project is located. If the project lies within multiple states, then provide the state for the counties which the form refers.

2. Provide the FERC Project Number assigned by FERC (i.e., P-00). Only one project number should appear on the form

3. Identify the federal reservation that is located within the project boundary as shown on the maps.

4. Identify the federal land holding agency responsible for the federal land within the project boundary as shown on the maps

5. Identify the county or counties the federal land lies in.

6. Identify whether you are completing the form for a licensed project or a preliminary permit. Identify whether the license is pending or issued. Provide an expiration date in case of a preliminary permit.

7. Complete a land description form for each federal tract with lands inside project boundaries. If more than one land description form is required to list the Federal tracts, page numbers must be shown in the upper right corner of the form, e.g., page 1 of 2. Do not list more than one project or state on each form.

8. Provide sheet numbers or letters that should be entered on the lines provided under "Exhibit Sheet Numbers) or Letter(s)" opposite to the corresponding Federal tract identification designated by the Federal land holding agency. Specify the exhibit sheet (drawing) number, or letter within the appropriate township section. If the FERC sheet numbers have been assigned, they must be used on the land description forms. In those cases where FERC has not assigned sheet numbers, assign letter designations A, B, C, etc., in lieu of FERC sheet numbers. Permittees and permit applicants must assign letter designations since FERC does not assign sheet numbers for permits.

9. Provide the name, telephone number of the person completing the form, and the date the form is submitted.

Form FERC-587
OMB No. 1902-0145
(Expires 07/30/2012)

LAND DESCRIPTION

Non-Public Land States
(and Non-Rectangular Survey System Lands in Public Land States)

1. STATE _____ 2. FERC PROJECT NO. _____

3. FEDERAL RESERVATION:_____

4. FEDERAL LAND HOLDING AGENCY: _____

5. Counties: _____

6. Check one:
_____ License
_____Preliminary Permit

Check one:
_____ Pending
_____ Issued

If preliminary permit is issued, give expiration date: _____

7. Federal Tract(s) Identification	8. Exhibit Sheet Number(s) or Letter(s)

9. contact's name _____

telephone no. (_____)

date submitted _____

This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under Section 24 of the Federal Power Act.

BUREAU OF LAND MANAGEMENT STATE OFFICES

Last Updated September 21, 2009

ALASKA

Bureau of Land Management
Division of Alaska Lands (AK-963)
222 W 7TH AVE STOP 13
ANCHORAGE AK 99513-7504

ARIZONA

Bureau of Land Management
Division of Lands and Renewable Resources (AZ-930)
1 N CENTRAL AVE STE 800
PHOENIX AZ 85004-4427

CALIFORNIA

Bureau of Land Management
Branch of Adjudication and Records (CA-943.5)
2800 COTTAGE WAY SUITE W1623
SACRAMENTO CA 95825-1886

COLORADO

Bureau of Land Management
Branch of Realty Programs (CO-935)
2850 YOUNGFIELD ST
LAKEWOOD CO 80215-7210

IDAHO

Bureau of Land Management
Land Services Section (ID-943A)
1387 S VINNELL WAY
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