



# United States Department of the Interior

GEOLOGICAL SURVEY  
RESTON, VA. 22092

In Reply Refer To:  
EGS-Mail Stop 405

March 25, 1982

WATER RESOURCES DIVISION MEMORANDUM NO. 82.67

Subject: LEGAL--Guide for Water Resources Division responsibilities  
relating to Federal Energy Regulatory Commission projects

The attached guidelines are provided to aid WRD District personnel in fulfilling the U.S. Geological Survey responsibility to assist the Federal Energy Regulatory Commission (FERC) in obtaining the hydrologic information they require from applicants for hydropower permits and licenses. The guide is intended to provide a framework for accomplishing the work and is not intended to be restrictive.

With the renewed interest in the development of small hydropower sites there has been a marked increase in applications for permits. The FERC anticipates this increased activity will continue for the next few years. At the present time we are investigating with the FERC the possibility of charging the applicant a fixed fee for the initial analysis performed to determine if adequate streamflow information is available at the site or if a streamflow gage or gages must be installed. We will advise you if permission is granted to charge this initial fee.

Additional information on how the initial analysis should be accomplished is being prepared by the Operations Section and Surface Water Branch for distribution in the near future.

The attached guidelines update Surface Water Technical Memorandum No. 65.5, dated May 3, 1965. A draft of the updated guidelines was reviewed by selected WRD Districts, the Surface Water Branch, the Review Branch of the Environmental Affairs Office, and the FERC Headquarters office in Washington, D.C. Copies of this guideline are being furnished to FERC Headquarters for distribution to their regional offices.

Any questions regarding these guidelines, or the FERC program in general, should be referred to the Chief, Operations Section, Mail Stop 405, Reston, Virginia, FTS 928-6861.

  
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Assistant Chief Hydrologist  
for Operations

Attachment

This memorandum supersedes SW Tech. Memo No. 65.5.

Distribution: A, FO

GUIDE FOR  
USGS RESPONSIBILITIES  
RELATING TO  
FERC PROJECTS

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GUIDE FOR  
USGS RESPONSIBILITIES  
RELATING TO  
FERC PROJECTS

PART I

PREFACE

A. DEVELOPMENT OF SOME FERC CONCEPTS THROUGH THE YEARS

1920 - The Federal Water Power Act was passed which authorized the Federal Power Commission (FPC) (now the Federal Energy Regulatory Commission (FERC)) to issue licenses for hydroelectric project works on navigable waters or upon any part of the public lands or reservations of the United States.

1935 - The Federal Power Act was amended to include a specific provision making it unlawful to construct, operate, or maintain hydroelectric works in navigable waters except under an FPC license or appropriate pre-1920 Federal permit.

1943 - Three decisions were issued by the FPC, basing findings of navigability primarily upon evidence of log driving and rafting.

1962 - The FPC began renewed efforts to bring under license all unlicensed projects subject to its jurisdiction. The following notable actions were taken by the FPC during this year:

1. The Power Act was changed in September 1962 (76 stat. 447) to provide for amending "... sections 10(b), 10(e), and 10(i) of the ... Act so as to authorize the Commission to exempt small hydroelectric projects (not over 2,000 horsepower installed capacity) from certain of the licensing provisions of the Act. Previously the Commission's exemption power applied only to projects of 100 horsepower or less." (FPC 1962 Annual Report, page 11.) The purpose of the amendment was to reduce the burden of regulatory action on minor projects that are often of no consequence for some of the purposes of the Federal Power Act. The amendment to the Act permits the Commission to waive the licensing requirements (such as the stream gaging requirement) which are only necessary for projects that have a real bearing on the cost of electricity to consumers generally. The amendment of the Act makes it possible for owners of many small constructed projects operating in violation of the law to obtain a license without a great deal of expense. (See also sheet 15.)

2. The FPC ruled that unless otherwise specified, licenses granted for projects long operated unlicensed would terminate December 31, 1993 (50 years from the year the FPC's concept of navigable waters as related to transportation of forest products was settled) with effective date determined according to date of unauthorized construction. (FPC 1962 Annual Report, page 24.) It is implied that those who do not come in under license voluntarily may not later get the same terms and treatment as other licensees. (See also sheets 9 and 10 herein.)

1963 - The FPC amended its regulations to:

1. Require that a plan for public recreation use of lands and waters must be filed as a part of any application for a license; and that this plan must be prepared in cooperation with State and local agencies as well as with the Federal agency having supervision in cases where U.S. lands are affected (FPC 1963 Annual Report, page 16);

2. Speed up procedures to carry out its responsibilities for collecting money owed the U.S. Treasury by owners of downstream hydroelectric projects which benefit from upstream Federal developments (Ibid., page 17).

A statement of the purpose of a license that was contained in FPC "Opinion and Order Adopting Examiner's Order," issued July 30, 1964, for Project No. 2199, is of interest and reads:

"The only purpose for which we may license the use of waterpower resources is to serve the public interest. No private individual, no private company, no municipality or state, no one other than the people of the United States has any right or claim to the use or benefit of these resources. A license under the Federal Power Act is a privilege conferred, not for the benefit of the licensee, but for the benefit of the public. Before any license can be issued, the benefit to the public must be shown."

1970 - P.L. 91-190, National Environmental Policy Act of 1969 (NEPA). Established the Council on Environmental Quality, and by the end of the year, the Environmental Protection Agency. The law initiated the requirement for environmental impact statements (EIS) as a prerequisite to any proposed Federal action that might have adverse effects upon the environment. All environmental impact statements for FERC projects are reviewed for the Survey by the Office of Earth Science Applications, Environmental Affairs Office, Review Branch.

- 1977 - Effective August 4, the Department of Energy Act establishes the Federal Energy Regulatory Commission as a part of the Department of Energy. The law transferred, among other things, all hydro-power licensing and other responsibilities of the Federal Power Commission pursuant to Part I of the Federal Power Act to FERC. The Secretary of Energy provides FERC necessary support and facilities but cannot supervise or direct FERC in the performance of FERC functions.
- 1980 - The Commission implemented Section 30 of the Federal Power Act and adopted regulations allowing 15mw or less projects, utilizing only the head of man-made conduits, to be exempted from portions of the Federal Power Act (Federal Register, Vol. 45, pg. 28085).
- 1980 - The Commission partially implemented Section 408 of the Energy Security Act (ESA) and adopted regulations allowing case-by-case exemption from licensing of certain 6mw or less projects utilizing existing dams or natural water features (Federal Register, Vol. 45, pg. 76115).
- 1981 - The Commission and its predecessor, the FPC, had maintained a distinction between "major" and "minor" projects based on 10(c) of the Federal Power Act. That provision permits waiver of some provisions or requirements of the Act for projects (minor) with not more than 2,000 horsepower or 1.5 megawatts of installed capacity. The Commission now has adopted regulations governing a "short form" application for license for minor water power projects and for any major water power project with an installed capacity of 5 megawatts or less (Federal Register, Vol. 46, pg. 55944).
- 1982 - The Commission further implemented Section 408 of ESA and adopted regulations allowing categorical exemption from licensing of qualifying 5mw or less projects. These projects generally utilize existing dams, do not change the flow regime or reservoir elevation, and would have very little environmental impact (Federal Register, Vol. 47, pg. 4232).

## B. DEVELOPMENT OF LANGUAGE AND FORMAT OF FERC DOCUMENTS

Soon after the establishment of the Federal Power Commission by Congress in 1920, district engineers of the USGS were given certain responsibility for the supervision of the "installation of gages, the ratings of said stream or streams, and the determination of the flow thereof" by specific language written into each license or permit issued by the FERC. Through the years, this language has taken various forms giving varying degrees of responsibility to the district engineers.

The license usually consists of the formal order by the FERC ("order issuing license") together with one of the "L-" forms and additional special articles; the permit, the formal FERC order ("order issuing preliminary permit") and the "P-1" form and additional special articles. It is understood from the FERC central office that current FERC basic rules governing project operation are contained in the "L-" forms of which there are 20, as listed below, together with the "P-1" form; however, site specific conditions are contained in the special articles.

- L-1 - Terms and conditions of license for constructed major project affecting lands of the U.S.
- L-2 - Terms and conditions of license for unconstructed major project affecting lands of the U.S.
- L-3 - Terms and conditions of license for constructed major project affecting navigable waters of the U.S.
- L-4 - Terms and conditions of license for unconstructed major project affecting navigable waters of the U.S.
- L-5 - Terms and conditions of license for constructed major project affecting navigable waters and lands of the U.S.
- L-6 - Terms and conditions of license for unconstructed major project affecting navigable waters and lands of the U.S.
- L-7 - Terms and conditions of license for minor project affecting lands of the U.S.
- L-8 - Terms and conditions of license for minor-part project (transmission line) affecting lands of the U.S.
- L-9 - Terms and conditions of license for constructed minor project affecting navigable waters of the U.S.
- L-10 - Terms and conditions of license for constructed major project affecting the interests of interstate or foreign commerce.
- L-11 - Terms and conditions of license for unconstructed major project affecting the interests of interstate or foreign commerce.

- L-12 - Terms and conditions of license for constructed minor project affecting the interests of interstate or foreign commerce.
- L-14 - Terms and conditions of license for unconstructed minor project affecting navigable waters of the U.S.
- L-15 - Terms and conditions of license for unconstructed project affecting the interests of interstate or foreign commerce.
- L-16 - Terms and conditions of license for constructed minor project affecting lands of the U.S.
- L-17 - Terms and conditions of license for unconstructed minor project affecting lands of the U.S.
- L-18 - Terms and conditions of license for constructed minor project affecting navigable waters and lands of the U.S.
- L-19 - Terms and conditions of license for unconstructed minor project affecting navigable waters and lands of the U.S.
- L-20 - Terms and conditions of license for constructed transmission line project.
- L-21 - Terms and conditions of license for unconstructed transmission line project.
- P-1 - Terms and conditions of preliminary permit.

Forms L-14 to L-21 of the foregoing list are new forms established as of October 25, 1975. All of the other "L-" forms have been revised and expanded in October 1975 to provide greater project control. The wording of the stream gaging article, which is included as one of the articles in licenses for major projects, has been rearranged by the revision. The usual language of the stream gaging article of the license is as follows:

"Article 6. The Licensee shall install and thereafter maintain gages and stream gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream gaging operations in the region of the project, and the Licensee shall advance

to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determination to the satisfaction of the Commission, and make return of such records annually at such time and in such form as the Commission may prescribe."

The stream gaging provisions of the permit (Article 1-A of Form P-1) are not quite as detailed as those of the license. The permit wording is as follows:

- " .... In carrying out the requirements of this permit the Permittee shall:
- " A. Install as soon as practicable, and thereafter maintain, such stream gages and stream gaging stations as the District Engineer of the United States Geological Survey having charge of stream gaging operations in the region shall designate as necessary and best adapted for the purpose of determining the stage and flow of the stream or streams affected by the proposed project, and shall provide for the required reading of such gages and for the adequate rating of such stations. The number, design, location, and time of installation of gages and stations, the rating of such stations, and the determination of the flow of such stations, and the determination of the flow of the affected stream or streams shall be made under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream gaging in the region of said project; and the Permittee shall advance to said Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Permittee shall, to the satisfaction of the Commission, keep accurate and sufficient records of the stage and flow of the affected stream or streams, and shall make such records available to the Commission at such times as the Commission may prescribe."

It is of interest to note that, where the stream gaging article of the license requires that the licensee shall "install and ... may deem necessary ...," the corresponding article of the permit requires that the permittee shall "install ... and ... maintain such stream gages and stream gaging stations as the District Engineer of the ... Survey ... shall determine necessary ...."

Stream gaging articles are not included in Exemptions (from licensing).

C. DEVELOPMENT OF THE LICENSE FOR A NEW (AS DISTINGUISHED FROM A CONSTRUCTED) FERC PROJECT

The first step toward establishing a new FERC project is usually the application for a preliminary permit. Obtaining a preliminary permit is optional. A developer may proceed directly to file a license or exemption from license. The purpose of the preliminary permit is to maintain priority of application for license while the applicant obtains necessary data, makes detailed engineering studies, and performs the acts required for filing an application for issuance of a license for a project to be constructed. Permits are issued for a maximum period of 3 years. Some applications for permit have been denied by the FERC because of conflicting applications for permits, licenses, or exemptions; inadequate development of the full potential of the project site under the proposal; priority for development by the United States or applications by States and municipalities; or for other reasons.

A notice of application for a preliminary permit is circulated among interested Government agencies in a manner similar to that described below for applications for 5mw licenses. A period of 60 days is allowed for receipt of pertinent comments from other Federal agencies on the application for preliminary permit. Many projects on which permits were issued have been dropped subsequently without request for a license because of potential environmental impacts, the projects were found to be uneconomical, the required land rights could not be obtained, or for a variety of other reasons.

If approved, the applicant is issued a preliminary permit. Subsequently, the FERC sends copies of the permit together with other pertinent material, to the Director of the Survey through the Department of the Interior. At this point, appropriate steps may be taken to implement the permit. The Survey's Reston office (Water Resources Division (WRD)) sends copies of the permit material it receives to the District having jurisdiction in the project area. If the investigations made by the applicant during the period of permit confirm feasibility and desirability of the project, formal application for license is made to the FERC.

The FERC carefully reviews the engineering and national policy aspects of the application for license. It also circulates the proposal (by public notice for 5mw or less projects and by direct mailing of copies of the application to agencies if over 5mw--additional copies of application may be requested by agencies from applicant) among other Federal, State, and local agencies which may be interested in connection with their own existing or proposed projects in the area, effects of the project on fish and wildlife propagation, the environment, or future mineral-resource developments, effects on national parks or other public lands, or other reasons. A period of 60 days is allowed for receipt of pertinent comments from other agencies on application for license.

The Interior Department, one of the agencies circularized, disseminates this license-application material to the Survey, Reclamation, Fish and Wildlife, Mines, Indian Affairs, National Park Service, and other Interior

agencies. The Survey's comments are prepared by the Office of Earth Science Applications, Environmental Affairs Office, Review Branch, and are forwarded to the Secretary's Office which consolidates Departmental views. The Operations Section (WRD) refers one copy to the appropriate District or Districts for information and the opportunity to comment within the period specified on any probable effects of the proposed project. Any comments which the Districts may have should be forwarded to the Operations Section for submittal to the Review Branch. An abstract (public notice discussed above) of the application is promptly published in the Federal Register and once a week for 4 weeks in the local newspapers in the project area. The same notice is sent by the FERC to State and county offices and other interested organizations in the project area. All organizations or individuals are invited to submit written concurrence, objection, or pertinent comments on the application to the FERC by a date specified in the notice of application issued by the Commission, usually 30 days after the last date of publication in newspapers. If persons file requests that they be parties in the case (file a petition to intervene) and a strong controversy develops on an application involving dispute of facts in the case, public hearings may be held on it by the FERC either in Washington or in the field. The FERC then issues its decision approving or denying the application. If appropriate, prior to any hearing being convened, an environmental impact statement is prepared for approved projects, and all parties are again asked for comments.

The FERC prepares a draft environmental impact statement (DEIS) on applications for proposed projects that would significantly affect the quality of the human environment. A notice of availability of the DEIS, which includes an abstract of the proposed project, is published in the Federal Register. Agencies, organizations, and individuals are invited to comment on the DEIS within 45 days of the Federal Register notice date. The FERC transmits copies of the DEIS to interested agencies, organizations, and individuals for comments. After receipt of the comments, the FERC prepares a final environmental impact statement (FEIS) which is given public notice in the Federal Register for a period of 30 days. After the expiration of the FEIS notice data, a license may be issued for the proposed project. If a hearing has been ordered as a result of unresolved issues concerning the proposed project, however, it would not commence until after issuance of the FEIS. After conclusion of the hearing process, a license may be issued for the proposed project.

If approved, the applicant is issued a license for a period not to exceed 50 years which authorizes construction (beginning within 2 years) and operation of the project. Subsequently, the FERC sends copies of the license, together with other pertinent material, to the Survey through the Department. At this point, appropriate steps may be taken to implement the license. The Operations Section (WRD) sends copies of the license material it receives to the District having jurisdiction in the project area.

D. DEVELOPMENT OF THE LICENSE FOR A CONSTRUCTED FERC PROJECT

Obviously no preliminary permit is involved when arrangements are made to bring a constructed project under license. A preliminary permit is issued for the purpose of establishing priority for application for license while engineering and economic studies are made to determine the best project for development of the water resources, but the so-called "constructed" project has been complete and in operation over a period of time.

For all practical purposes, the steps under I C relating to application for license can be considered as applying also for a constructed project. As indicated in the first paragraph on sheet 2 herein, the effective period of operation for constructed projects is very likely less than the full 50-year period assigned to new projects for construction and operation.

## E. PROJECT RELICENSING AND FEDERAL TAKEOVER

### 1. Relicensing

Shortly before a project's original license expires (usually after 50 years), the owner must apply for a new license. After full consideration, the Commission may either grant the original owner a new license, award the license to a competing applicant who is better able to operate the project, or, in the case of a project owned by a private company, recommend to Congress that it be taken over by the Federal Government.

### 2. Federal Takeover

The Federal Government has never taken over a privately owned hydroelectric project. (Under the Federal Power Act, projects owned by State and local governments are not subject to Federal takeover.) However, two major hydro projects pending relicense have been recommended for Federal takeover. In both of these cases Indian lands and the rights of Indians are involved.

F. EXEMPTION FROM ALL OR PART OF PART 1 OF THE FEDERAL POWER ACT, INCLUDING LICENSING

1. Conduit Exemptions

Processing of these applications involves publication of a public notice which allows agencies to respond within 45 days. The exemption automatically takes effect 90 days after it is accepted for filing. Typical conditions allow FERC enforcement powers and include provisions requested by fish and wildlife agencies.

2. Case-by-Case Exemptions

Processing is similar to No. 1, immediately above, except agencies are allowed 60 days from public notice issuance to comment, and the exemption takes effect 120 days after it is accepted for filing. Typical conditions are similar to No. 1 except that dam safety provisions may also be added.

3. Categorical Exemption

Applicant must file a "Notice of Exemption" containing general descriptive data and artifications of lack of impact on water quality, cultural resources, and fish and wildlife resources. Exemption takes effect 30 days after submittal. No prior public notice is given. A public notice that the exemption was issued will be published.

G. NATIONAL ENVIRONMENTAL POLICY ACT (P.L. 91-190)

The Act declares a Federal commitment to environmental protection and establishes stringent procedural requirements to enforce the careful consideration of environmental impacts of, and alternatives to, both Federal and Federally assisted actions. Insofar as water-resources agencies are concerned, the Act has its greatest effects upon (but is not limited to) the action agencies--those engaged in development and management of water resources. Under the Act, all Federal agencies must prepare an environmental impact statement (EIS) whenever they undertake any major Federal action significantly affecting the quality of the human environment. Preparation of the EIS must occur early in the planning process, before any irreversible commitment of resources has been made and must include the comments of any agency with special expertise in the area of impact involved. The demands of the Act are basically procedural, leaving to the agency the final substantive decision as to whether to proceed with the action.

In order to comply with its procedural mandate, agencies must identify all environmental impacts, identify those adverse impacts that cannot be avoided, identify alternatives to proposed action, explain the relationship between local short-term uses of the environment involved and the maintenance and enhancement of long-term productivity, and identify any irreversible and irretrievable commitments of resources involved in the proposed action.

The part of the Act having greatest impact on FERC is Section 102(2)(C) reproduced below.

## PART II

OPERATIONAL AND ADMINISTRATIVE PROCEDURES  
UNDER PRELIMINARY PERMIT OR LICENSEA. UNDER PRELIMINARY PERMIT1. Before Preliminary Permit is Effective

When application for permit is referred to the District office for review and comment, this is the first official notice that the FERC project may be constructed. Little need be done in the District office at this point except to submit, if desired, any pertinent comments and to make such basic plans, or to take such informal steps (such as contacting applicant or FERC Regional office) as may seem desirable at this early stage.

If the application for permit is approved and the FERC makes a decision to issue a permit, the WRD receives two copies of the FERC "order issuing preliminary permit." This embodies the specific nonstandard articles pertaining to the individual project, but, in order to constitute the complete permit, must show (on the form for this purpose included in the "order") acceptance of terms and conditions by the permittee and must have attached Form P-1 which embodies articles common to all projects under permit. The District office is furnished a copy of this "order issuing preliminary permit" as an indication that the complete permit may be imminent. At this point, it is proper to make whatever further contact with the prospective permittee that seems warranted. If the District wishes to do so, it may send to the prospective permittee a letter advising of the usual requirements about stream gaging and supervision and offering assistance in preliminary appraisal of project needs. Actual start of any stream gaging program, however, must await acceptance of the permit. If extenuating circumstances require that pertinent water data be made available prior to formal issuance of permit, the Reston office should be consulted for advice and/or assistance. The Reston office then can ascertain the status of final permit and whether there is likely to be any last-minute change.

2. After Preliminary Permit is Effective

After the preliminary permit is effective, the FERC transmits copies of it as well as any related material to the USGS. Streamgaging supervision is assigned by the Assistant Chief Hydrologist for Operations to the USGS District office in the project area. The WRD receives two copies of the permit which is comprised of the following:

FERC "order issuing preliminary permit" showing on the form provided acceptance of terms and conditions by the permittee, and Form P-1.

Copies of the permit and of any related material are sent by the Operations Section to the District office at which time appropriate steps to implement the stream gaging provisions can be taken.

A permit is issued for the sole purpose of maintaining priority of application for license while studies are made to obtain information necessary for inclusion in an application for license, should one be applied for. If a stream gaging program is warranted as one of the studies under the permit, the following procedures apply:

- a. Determining and Implementing the Gaging Program. Follow procedures shown under II B 1 b (1), sheet 17.
- b. Financing. An FERC permittee normally will not be required to pay the cost of operating gaging stations that previously had been established as a part of our regular stream gaging program prior to the granting of the permit. If available records are inadequate for full appraisal of permit needs, the permittee is expected to bear the cost of the additional facilities required. As soon as the permittee is granted a license, he will be governed by terms of the license.
- c. USGS Responsibility in Permit Enforcement. Follow procedures shown under II B 1 b (9), sheet 19.
- d. Records and Reports. Follow procedures shown under II B 1 b (10), sheet 19, as they relate to a preliminary permit.
- e. Coordination. Follow procedures shown under II B 1 b (11), sheet 20.
- f. Changes in Project Status. Follow procedure shown under II B 1 b (12), sheet 20.

B. UNDER LICENSE

1. NEW (as distinguished from CONSTRUCTED) projects

a. Before License is Effective

When application for license is referred to the District office for review and comment, this is the first official notice that the project may be licensed. A long period may elapse between this action and final issuance of license. Little need be done by the District office at this point except to submit, if desired, any pertinent comments and to make such basic plans or take such informal steps (such as contacting applicant or FERC Regional office) as may seem desirable at this early stage. Comments must be received in the Washington office within the time allowed.

Ordinarily, no comment on stream gaging requirements is needed for major projects under the assumption that requirements will be adequately covered by the standard stream gaging article which appears in the license for major projects (as, for instance, for a project which does not change the natural regimen of the stream to any appreciable degree, or for a proposal for minor modification of previous works). If, however, the application contemplates manipulation of the storage, head, or streamflow to the extent that additional gages or gaging stations are required; or indicates that, for an existing station operated under a program not connected with the project, it is necessary to use more costly operation and/or computation procedures; or if otherwise unusual or extraordinary stream gaging requirements are indicated, a statement should be submitted (to the Water Resources Division) describing the effects and/or new requirements.

The purpose of the water records is to provide the FERC with an accurate basis from which to evaluate the project for plant efficiency and for maximum power development at the site.

As noted in the Preface herein on sheet 1, the limiting figure distinguishing minor from major projects has been raised from 100 horsepower or less to 2,000 horsepower or less. In addition, Order No. 106 exempting small hydroelectric projects with an installed capacity of 6,700 horsepower (5 megawatts) or less to Part 1 of the Federal Power Act will eliminate some of the problems relating to stream gaging supervision. It is possible, however, that the question of the desirability of stream gaging might arise in applications relating to some of the larger minor projects. The FERC may at its discretion waive the stream gaging requirements in the case of minor projects, and usually does. However, if circumstances are such that it is desirable to recommend inclusion of the stream gaging article in the license for a minor project under the new definition (or a small major project) in order to safeguard present and future water-record aspects, a strong justification supporting such recommendation may be included by the District in its comments. We have no assurance that the stream gaging provisions will be included in a minor license, even if recommended to the FERC.

Any comments that are made are passed on to the staff engineer in the Director's office, where comments within the Survey are consolidated. If the WRD comments are sufficiently significant, they are included in the Survey's consolidated comments. Such comments insure early notice to the applicant of requirements for stream gaging work, small though they may be in relation to the total power project.

If the application for license is approved and the FERC makes a decision to issue a license, the WRD receives two copies of the FERC "order issuing license." This embodies the specific nonstandard articles pertaining to the project (including some which may describe stage or discharge restraints) but, in order to constitute the complete license, must show (on the form for this purpose which is included in the "order") acceptance of terms and conditions by the licensee and must have attached the appropriate "L-" forms for minor projects that do not contain the stream gaging article. The District is furnished a copy of this "order issuing license" as an indication that the complete license may be imminent. At this point, it is proper to make whatever further contact with the prospective licensee seems desirable in order to pave the way for implementing the stream gaging provisions when the license is effective. If the District wishes to do so, it may send to the prospective licensee a letter advising of the usual requirements about stream gaging and supervision, and offering assistance in preliminary appraisal of project needs. Actual start of the stream gaging program, however, must await acceptance of the license. If extenuating circumstances require that pertinent water data be made available prior to the formal issuance of license, the Reston office should be consulted for advice and/or assistance. The Reston office then can ascertain the status of final license and whether there is likely to be any last-minute change.

b. After License is Effective

After the license is effective, the FERC, by letter to the Director of the USGS, transmits copies of it as well as related material and assigns stream gaging supervision to the USGS District office in the project area. The WRD receives two copies of the license which is comprised of the following:

FERC "order issuing license" showing on the form provided acceptance of terms and conditions by the licensee, and the appropriate "L-" form.

Copies of the license and related material are sent by the Reston office to the District office at which time appropriate steps to implement the stream gaging provisions can be taken. At the same time the FERC sends the letter to the Director, it sends the licensee a similar letter which includes the information that the District office of the USGS in the project area has been designated to have stream gaging supervision (at one time the Survey was furnished copies of the letter to the licensee but this is not now the case).

Procedures for implementing the stream gaging provisions are given below:

(1) Determining and implementing the gaging program. Either one of the two following methods may be used, depending on which works better in the individual District.

(a) Upon receipt of the license, the District prepares a program, which, in its opinion, will provide the necessary streamflow data. This program is submitted as a recommendation to the Regional office of the FERC. The Regional office then concurs in all or part of the program and may suggest changes. This program, as mutually agreed upon between the USGS and the FERC, then becomes the proposed program. At that time, the District presents the program to the licensee and works out with him the remaining details such as design of gages, time schedule for installation, cost, decision as to operation by the USGS or licensee, etc. If the licensee objects to the extent that agreement cannot be reached, the proposal may be discussed further with the FERC Regional office. The Washington office of the FERC (through the WRD) is the final recourse for any questions that cannot be resolved otherwise.

If the licensee elects to do the stream gaging with his own force, the arrangements should include a means of determining that the methods used are acceptable by USGS standards.

(b) The other procedure is for the District to contact the licensee directly as soon as the license is received. The program is then worked out between the licensee and the District. After agreeing on a program, the District advises the FERC Regional office.

As the FERC Regional office for the project area stands ready to assist in implementing the license (or permit), as well as to render other assistance, the importance of keeping in close touch with that office at all stages of the project is stressed.

(2) Financing. If certain required gaging stations are already being operated with USGS or cooperative funds, the licensee is expected to assume part or all of the operation and maintenance cost of such stations since the license places a responsibility on the licensee to provide water records pertinent to the project. This is true also if the stations are being operated under a collaborative program, unless for some reason the collaborating agency desires to continue financial support. If shared support is appropriate for a record which is of value to the project and the FERC as well as to another agency (or agencies), the sharing of costs should, of course, be equitably determined. If existing records relating to the project are inadequate for full appraisal of the utilization of the available water resources and the establishment of new gaging stations is needed, the licensee is expected to bear the cost of the additional facilities required.

Survey funds are not available for FERC projects on a repay basis except under prior approval by the Washington office of the Survey. Advances of funds should be the general rule. FERC project funds (for all projects within a District) should be consolidated for accounting purposes insofar as feasible.

(3) Minimum flow requirements. If a license stipulates that a certain minimum flow of water be released down a stream either continuously or for designated periods, a rated low-water gage below the dam should be required, as a minimum, unless a fixed opening in the dam or some other satisfactory means of measuring is provided. The Survey does not have the responsibility for checking compliance, but copies of records showing the status of compliance may be furnished periodically directly to the appropriate FERC office. License conditions requiring a minimum flow release and/or stream gaging are expected to be complied with by the licensee. Disregard of these license requirements may result in enforcement action by FERC. Minimum flows may be temporarily modified only in operating emergencies beyond the control of the licensee and for fishery management purposes upon mutual agreement between the licensee and the appropriate Federal and State fishery agencies. Permanent changes in minimum flow releases must have the approval of FERC.

(4) Releases from reservoirs during floods. If a license stipulates that the release from a reservoir during flood periods shall not exceed the inflow or that the rate of increase or decrease of released water shall not exceed certain limits or stipulates other requirements of this nature, the District should require suitable gage installations to provide sufficient data to determine compliance with such license provisions.

(5) Records of reservoir contents. If a license stipulates that an accurate record of reservoir contents be obtained, it shall not be the responsibility of the District to determine the accuracy of the capacity curves or tables used by the licensee except when specifically required to do so by the terms of the license. However, it would be desirable to determine that methods acceptable by USGS standards were used to develop the curves or tables.

(6) Effective head on turbines. If a license stipulates that gages be installed and operated so as to give the effective head on turbines, the District should see that the head and tail water gages are correctly installed, adequate, and correctly read. They may be either recording or nonrecording gages, as determined by the Survey District after discussion with the licensee. Sometimes the tailwater gage records require less refinement of accuracy for high-head than for low-head power-plants. Reservoir levels usually must be accurate. Details of obtaining an adequate record should be worked out with the licensee.

(7) Power records in lieu of gaging station records. A record of flow through a powerhouse by converting from electrical units or computing, from log sheets, the discharge through gated openings or over spillways, may be acceptable in determining "the amount of water ... withdrawn from storage ..." if in the judgment of the District, the record at all times has the required accuracy. This often requires a series of discharge measurements to check the turbine or spillway rating and spot checks periodically thereafter. However, in many cases the accuracy is uncertain, and an independent record for checking purposes from a gaging station is desirable if one can be reasonably obtained.

(8) Public power licenses. When a public agency such as State, city, Public Utility District, or Commission is granted a license for a development, it should be governed by the same general rules as other applicants unless special terms are specifically set by law or by the license. Occasionally, gaging stations that are financed from other sources may satisfy part or all of the license requirements. An equitable financing arrangement then should be worked out among all parties concerned. Rarely will the licensee be relieved from assuming responsibility for all or at least part of the station costs.

(9) USGS responsibility in license enforcement. Under no circumstances should it be considered the responsibility of the District to enforce the terms of the license. Rather, the District's responsibility should be confined to collecting and furnishing sufficient data to the FERC so that any necessary enforcement can be done by the FERC. Local arrangements should be made for any current or periodic (in addition to annual) data desired by the FERC Regional office.

(10) Records and reports.

(a) Reston Office (see WRD Memo No. 74.126)

(i) Annual streamflow records for FERC projects are no longer required by the Washington office of FERC. Each District will continue to furnish annual State reports to the FERC Regional Engineer.

Unpublished data required by the license shall be retained in the file and furnished to the FERC on request.

(ii) Summary of Program should be transmitted through channels as requested by WRD Planning Section. It shall be used to show work to be performed for FERC licensees and permittees. It will be satisfactory to prepare one Summary of Program for all FERC licensees and permittees for each District. The number of sites in each State should be given in the "remarks" section of the Summary of Program.

(b) To FERC Regional Engineer. As required in accordance with arrangements made between the District and the Regional office.

(c) To Regional Office. Copies of transmittal memorandums and pertinent correspondence regarding FERC projects should be sent to the Regional office for information or routed through that office if requested.

(d) To licensee. As required in accordance with arrangements made between the District and the licensee.

(11) Coordination. Normally, if a project extends into more than one District, direct coordination between Districts is desirable from the onset of negotiations. In some instances, this office will designate the District to be responsible for stream gaging supervision; in others, joint supervision by both Districts may be designated.

(12) Changes in project status. Any change in the status of an FERC project is covered by an FERC "order" which is received in the WRD in duplicate--one copy is relayed to the District office. If the Districts learn of any changes in status in an FERC project of which the Reston office or the FERC may not be aware, the Reston office should be advised.

## 2. CONSTRUCTED Projects

### a. Before License is Effective

Procedures under II B 1 a (sheets 15 and 16) apply, insofar as they relate to a constructed project.

As discussed on sheets 1-5 of the Preface, the FERC is making a strong effort to bring under license all unlicensed hydroelectric power projects that are subject to its jurisdiction. Owners of most of these projects have indicated their intention of filing application for license; doubtless many others will do likewise. Hence, a large number of applications for license for constructed projects are now requiring attention.

### b. After License is Effective

SPECIAL NOTE: The license places a responsibility on the licensee to provide water records unless the requirement to provide such records is waived by the FERC due to compelling reasons. Negotiations with a licensee for a constructed project to implement stream gaging provisions of the license admittedly can be difficult, must obviously be undertaken with great care, and should be governed by prevailing circumstances. Experience has shown that licensees for constructed projects feel some reluctance to assume financial obligation for a stream gaging program merely because a license has been issued, particularly for gaging stations that have been in operation over a period of time. It might not be appropriate for the USGS to insist on costly record collection under all circumstances. On the other hand, failure to bring the licensee into the financing, where records pertinent to the FERC project have been collected for other purposes over a period of time, might conceivably open the USGS to the criticism that the Federal Government was paying costs that should be the responsibility of a private organization. The impact upon the licensee can be ameliorated under some conditions by reaching an agreement to share costs of existing installations, by use of powerplant records (which should be checked for conversion to amount of streamflow) in whole or in part, or, under rare circumstances, by relieving the licensee of additional financial outlay if approved by the FERC. If circumstances are such that, for various reasons, it appears that the stream gaging article in a major license is superfluous, it nevertheless would be inadvisable to recommend that it be omitted since it provides a means whereby licensee support can be obtained if circumstances should change.

(1) - (12) Procedures under II B 1 b--including (1) through (12) (sheets 15 through 20)--apply except as they may be modified by the preceding paragraph.