

COLUMBIA BASIN INTER-AGENCY COMMITTEE
ONE HUNDRED THIRTY-SEVENTH MEETING
PORTLAND HILTON HOTEL
MARCH 21, 1967

A REPORT
ON THE
WASHINGTON PUBLIC POWER SUPPLY SYSTEM PROPOSAL
FOR
NUCLEAR STEAM - ELECTRIC PLANTS
TO MEET
REGIONAL POWER NEEDS

Presented by

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

A REPORT ON
WASHINGTON PUBLIC POWER SUPPLY SYSTEM PROPOSAL FOR
COOPERATIVE UNDERTAKING OF THERMAL PLANTS
TO MEET REGIONAL POWER NEEDS

It was my privilege last March at your meeting in Richland to present a report on the Hanford Nuclear Steam Plant prior to its startup in April, last year.

It is now my privilege to report to you on plans and viewpoints of our organization aimed at insuring an adequate low cost power supply to meet regional power needs in cooperation with BPA and the Region's Utilities.

Before reporting on the present status of the Washington Public Power Supply System proposal for the cooperative undertaking of a regional nuclear plant, a brief outline of the underlying factors and incentives which motivate us may be helpful in placing our proposal in proper perspective.

A review of current forecasts of regional power insufficiency is pertinent to the understanding and appraisal of our proposal. We believe a review of recent BPA forecasts will focus appropriate attention on the relative urgency and magnitude of firm power insufficiency for Preference Customers, for BPA industrial loads and for Investor Owned Utilities.

I would like to direct your attention to Chart No. 1. This illustrates, in average megawatts during the critical period and under critical water year conditions, the estimated loads for the years 1967 through 1984. Column A represents BPA Preference Customers forecasted loads; BPA Industrial loads are indicated by Column B; Column C illustrates Investor Owned Utilities requirements.

Estimated energy supplied by BPA is shown in blue. The brown area indicates the power supplied by each utility from its own resources obtained through Hanford exchange and other sources.

Expected additional requirements in excess of BPA energy and other resources required by Preference Customers is indicated by the red area of Column A.

Expected additional requirements to meet BPA industrial loads is shown by the yellow area of Column B.

Additional requirements in excess of BPA energy and other presently known sources to meet private utility loads is shown by the green area of Column C.

It will be noted the first BPA power insufficiency occurs in 1973-74 and results in a deficit to meet BPA industrial loads.

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BPA firm energy insufficiency to supply some part of private utility loads occurs in 1979-80 and is the first year of Preference Customer Insufficiency. This, of course, demonstrates the pull back of BPA power from the non-Preference Utility Customers to meet Preference Customer requirements.

It will be noted that BPA Preference Customer loads in the early years of this period are about the same magnitude as expected private utility loads and somewhat less in the later years. The sum of the BPA Preference and Industrial Customers expected loads are substantially (nearly 80%) more than the private utility loads.

To focus attention on the relative urgency and magnitude of forecasted firm power insufficiency for BPA Industrial loads and Investor Owned Utilities we have prepared Chart No. II.

On this chart the additional average energy requirements in a critical water year to meet forecasted Preference Customer loads, are shown by the red area. Again it will be noted that insufficiency for BPA Preference Customers will not occur until 1979-80. You will also note that by 1985 approximately three thousand megawatts of additional average energy will be required to meet load growth of Preference Customers and that will require about 5000 Megawatts of additional peaking capacity.

Additional average energy requirements to meet potential large electro process or other industries of the type presently served by BPA directly is shown by the yellow area. The first year of forecasted insufficiency to meet additional requirements for these loads is 1973-74 and will require some 4000 Megawatts to satisfy present load estimates by 1984-85.

Additional firm energy will be required to meet Investor Owned Utility loads shown in green beginning 1975-76. This will amount to more than 6000 Megawatts by 1985. Those compiling the data from which these charts were prepared, assumed that the High Mountain Sheep project would be a resource of the Investor Owned Utilities and would be available by 1973-74. If this is not the case and it becomes a resource of the Preference Customers on the same schedule some change in future requirement would be in order and the distribution would depend upon marketing arrangements for High Mountain Sheep as a public agency project.

We have considered it appropriate to show on this chart the added requirements necessary to meet any obligation to supply firm energy to the Central Valley Project (CVP) from the Northwest. BPA has included in their resource allocations the supply of firm peak capacity of 440 Megawatts to CVP beginning in 1971. If firm energy requirement for the CVP load were to be supplied from the Northwest it would require 320 Megawatts of added average energy requirements from Northwest sources and is shown on this chart as indicated in base block shown in violet.

From this chart it become apparent that:

1. BPA Preference Customers are now required to schedule plants to meet future power needs until the mid-seventies or later.

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2. With the exception of an energy commitment to supply a CVP requirement, the BPA direct service to power oriented industries creates the incentive and earliest need for power from thermal plants now being planned.
3. The Investor Owned Utilities will require additional energy resources in 1975-76 and thereafter at a rate of increase averaging about 600 MW per year through 1984-85. The annual increased requirements of the Investor Owned Utilities is approximately equal to the combined additional requirements of the Preference Customers and the BPA industrial expected loads during the period shown.

Faced with this power supply outlook BPA Preference Customers, as a group, must ask themselves, "Why undertake or participate in thermal plants to meet future requirements six or seven years ahead of the time a plant could be scheduled to meet expected shortages in the late seventies?"

The answer to this very pertinent question has its answer, we believe, in our statement of objectives which prefaced our proposal of a plan for thermal plants to meet regional needs and the proposed means for their achievement.

In our proposal we stated the first regional objectives should be TO PROVIDE AMPLE POWER AT LOWEST COST TO MAINTAIN THE REGION'S COMPETITIVE POSITION IN SERVING LARGE POWER ORIENTED INDUSTRIAL LOADS.

Historically, this has been a fundamental principle of the BPA Marketing Program with results that encourage its perpetuation. This policy has been endorsed and reaffirmed by the present BPA Administrator and was the theme of Mr. Luce's earlier encouragement for regional cooperation by the utility industry in thermal plant planning to achieve this objective.

To insure the economic development of the entire Northwest this objective, we are convinced, deserves the support of BPA Preference Customers and their full participation in the cooperative undertaking of early thermal plants in a manner not adverse to their own power supply self-interest.

Our second objective should be TO PROVIDE POWER TO MEET THE LOAD GROWTH OF ALL UTILITIES. This objective, of course, recognizes the responsibility of each utility to meet the load growth requirements in its own service area. The extent to which any plan for thermal plants to meet regional needs satisfies this objective will be an important consideration for utility participation. Likewise, the more imminent the need for additional power the greater the incentive for participation to satisfy this objective. In this connection power insufficiency for BPA Preference Customers may occur at an earlier date than is currently forecast.

Our third objective should be TO POSTPONE BPA POWER INSUFFICIENCY. Present indications are that the cost of BPA power will continue to be, in the foreseeable future, lower than the cost of firm power from any alternate source.

Accordingly, the postponement of BPA power insufficiency to all classes of customers is a logical and desirable objective for a plan for the cooperative undertaking of thermal power to meet regional needs. Conversely, any plan for thermal plants that will accelerate BPA insufficiency or cause an increase in BPA power costs would be less attractive than one which did not.

Finally, since benefits and risks are inherent in any cooperative undertaking of thermal plants our fourth objective is to SHARE THERMAL PLANT RISKS AND BENEFITS ON AN EQUITABLE BASIS. This objective is both essential for maximum utility participation and as a sound business principle.

The practical accomplishment of these objectives requires that certain guidelines be followed. First, INSURE THAT THE OUTPUT OF THERMAL PLANTS ARE INTEGRATED WITH THE FEDERAL HYDRO POWER AND GRID SYSTEM. As demonstrated by the arrangements entered into for Canadian Treaty projects, headwater benefit coordination and the Hanford Project such a guideline is almost axiomatic in the Northwest in any power supply planning.

Next we should UTILIZE LOWEST COST NON-FEDERAL FINANCING. Since the cost of money is the major cost of power from any thermal plant this criteria is essential to the maximum achievement of "PROVIDING AMPLE POWER AT LOWEST COST TO MAINTAIN THE REGION'S COMPETITIVE POSITION IN SERVING LARGE INDUSTRIAL LOADS".

The cost advantage of municipal corporation revenue bond financing as compared to other non-Federal financing is substantial and would be utilized in any project undertaken or participated in by our organization.

Finally, UTILIZE EXISTING BPA AUTHORITY AND EXISTING IMPLEMENTING ORGANIZATION. To rely upon new BPA authority or the creation of a new implementing agency would incur serious delays and hazards without any presently identifiable benefits.

The BPA "exchange" authority has been used successfully to accomplish similar objectives in the Columbia Storage Power Exchange and Hanford Arrangements and is considered applicable to the next several plants.

The Supply System is a qualified Municipal Corporation for undertaking the financing, construction and operation of thermal plants that may be agreed upon by the participants and, as pointed out earlier, has offered to serve in this capacity.

We recognize that, in the final analysis the decision for participation or other specific action required by any proposal will be by the policy making body of each autonomous utility. The required consensus for implementing any plan will be expedited and made possible by a common basis for evaluation of proposals for cooperative thermal plants. We believe that the foregoing objectives and guidelines provide a sound basis for such evaluations.

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From our consideration of the objectives and the means for their accomplishment we have concluded that the priority item of any plan for the regional undertaking of a thermal plant is the adoption of a sound and acceptable marketing plan. Not only by necessity does the marketing plan identify the expected participants, but it also provides a logical starting point for establishing other parameters such as time schedules, operating characteristics, financing requirements, responsibilities as well as technical and legal matters.

The marketing plan we proposed was based on using the existing BPA exchange authority. It was presented in two forms for reasons which will become apparent from the following title descriptions. Time allotted to this report does not permit more than brief comments on the basic principle of our proposed marketing plant.

MARKETING PLAN FORM I

AN ARRANGEMENT IN WHICH BENEFIT AND RISKS ARE REFLECTED IN BPA FIRM POWER AVAILABILITY AND BPA WHOLESALE RATES.

MARKETING PLAN FORM II

AN ARRANGEMENT IN WHICH BPA RECEIVES FIXED BENEFITS AND MAJOR RISKS ARE BORNE BY POWER PURCHASERS.

As indicated by these titles the two forms of the proposed marketing plans differ with respect to the manner in which the benefits and risks are borne by the participants. In the first plan the benefits and risks are borne by BPA and accordingly would ultimately be reflected favorably or adversely in BPA rates in the same identical manner as the present Hanford Arrangement.

In the second form BPA risks are minimized and the major risks and benefits are reflected in the cost and amount of firm power received by purchasers as a result of the exchange. By the same token this plan inherently creates a greater incentive for an equitable means for power sales allocation which can be best accomplished only by the participation of all BPA Utility Preference Customers.

Our Plan I or Hanford Type Marketing Arrangements, of course, would obviously provide a built-in means of equitable sharing of the benefits and risks by all BPA customers including BPA industrial users. It also would provide a degree of flexibility with respect to extending the availability of BPA to the private utilities. On the other hand it would require a finding by BPA, as in the case of Hanford, that such an arrangement would enhance the utilization of federal power resources.

To date, BPA has not given us any encouragement to Marketing Arrangements based on the use of the BPA exchange authority in a manner we have proposed and which has been used successfully in the Hanford Marketing Arrangements.

On the other hand the BPA Thermal Task Force has been invited to give consideration to a Marketing Arrangement which in effect would implement the principle of our proposed alternate Marketing Plan. By this method there would be an exchange by BPA of peaking capacity, required reserves, and transmission to load centers with utility participants for off-peak energy obtained from thermal generating plants. It would be the intent to so arrange the terms of the exchange to result in approximately the same cost of power to the thermal plant participants as the average cost of BPA power under existing rates prior to Preference Customer BPA power insufficiency, or possibly later. At the time BPA power becomes insufficient for the needs of Preference Customers the cost of power from any thermal plant undertaken by these arrangements would not be expected to exceed, and would hopefully be less than, the cost of power from an alternate thermal source available in the early eighties. On the BPA side of the ledger, during the term of the contract the value of energy received in exchange from the thermal plants under this arrangement would be no less than BPA's full compensation at existing rates for services rendered. Very properly BPA has stipulated that such arrangements would be applicable to all thermal plants required to meet regional needs at least until the beginning of BPA insufficiency to meet Preference Customer requirements.

We believe these arrangements deserve exploration by all utilities of the economics and the implications their application may have on plants presently proposed as well as others needed to meet the thermal plant needs of the region until 1980. We will do this with any plant proposed for cooperative participation undertaken by WPPSS.

Motivated by the regional objectives we have enunciated, the Supply System has initiated certain studies. We are endeavoring to obtain site information required for cost and feasibility determinations in areas within the State of Washington where preliminary investigations have indicated locations are suitable for nuclear plants required before 1980. We expect these studies to result in selection of potential sites in the lower Columbia, Puget Sound and Mid-Columbia (Hanford) Areas. In this connection the Hanford site may offer substantial savings and other advantages compared to sites nearer coastal load centers. These factors could offset any Hanford site transmission loss penalty. Comparative studies will bring into sharper focus more information upon which to make a decision.

We have also taken steps to complete loads and resources studies to determine the benefits and risks our members and other Consumer Owned System participants would sustain in the purchase and use of power from thermal plants proposed by WPPSS.

We have received and are in the process of evaluating bids on the long lead time turbine-generator component for a 1000 MWe nuclear steam plant. This action was taken to make possible the regional availability of power from a 1000 MWe nuclear plant by 1973. To take full advantage of any order placed as a result of the bids received it will be necessary to place an order for the nuclear steam supply system within the next several months. This, of course, in combination with other circumstances creates an added incentive to all concerned to proceed promptly with all facets of this complex cooperative planning.

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We have also devoted our attention to regulatory and licensing requirements as well as environmental and technical problems and procedures applicable to nuclear plants. At this point it is clear that only by a mutual understanding and recognition of the obligations and responsibilities of those charged with protecting the public interest in non-power aspects of nuclear plants can timely and equitable solutions to the problems be resolved.

Future actions and steps to continue the progress made to this point, of course, will be dictated by circumstances which emerge from the intensive effort by all utilities presently engaged in regional thermal plant planning under the leadership of BPA.

Before closing, I believe the subject of "undivided ownership" versus other forms of utility participation in cooperatively undertaken thermal plants deserves some attention in this report.. This subject is particularly pertinent to consideration by Consumer Owned Systems under conditions which will prevail and be applicable to plants built prior to the early eighties and before BPA power is no longer available in quantities required to meet their load growth.

It is recognized that Investor Owned Utilities have an incentive for "undivided ownership" in thermal plants because of the relationship it has to their rate base and financing. It is also recognized that a similar incentive is not necessarily applicable to Consumer Owned System financing.

Concern with this matter has resulted in efforts to enact legislation in Oregon and Washington to permit "undivided ownership" by private and public agencies. Arrangements for thermal plant participation by Consumer Owned Systems by means of "undivided ownership" may have some merit at some future time or in some individual instances. Participation in plants now being planned by Consumer Owned Systems could result in greater benefits and less risks if accomplished by long term contracts rather than by "undivided ownership". As we see it this conclusion is supported by the following reasons:

First, widespread participation by BPA Preference Customers in thermal plants cooperatively undertaken and sponsored by qualified agencies using public financing is essential to obtain lowest money cost and minimize risks. Problems involved in providing capital by a multiplicity of public agencies would result in higher cost power.

Second, "undivided ownership" would tend to encourage a concentration of participation by an individual public system in a single plant to the probable detriment of lowest cost power from all projects and some inequities in sharing risks and benefits. Long term power purchase contracts would encourage smaller participation in all plants undertaken by public agencies to the cost advantage to all projects and provide a more equitable sharing of risks and benefits.

And third, in any event, the final decision by the utility participant should turn on which device results in the LOWEST COST POWER SUPPLY commensurate with the risks involved and provides greatest benefits in the public interest.

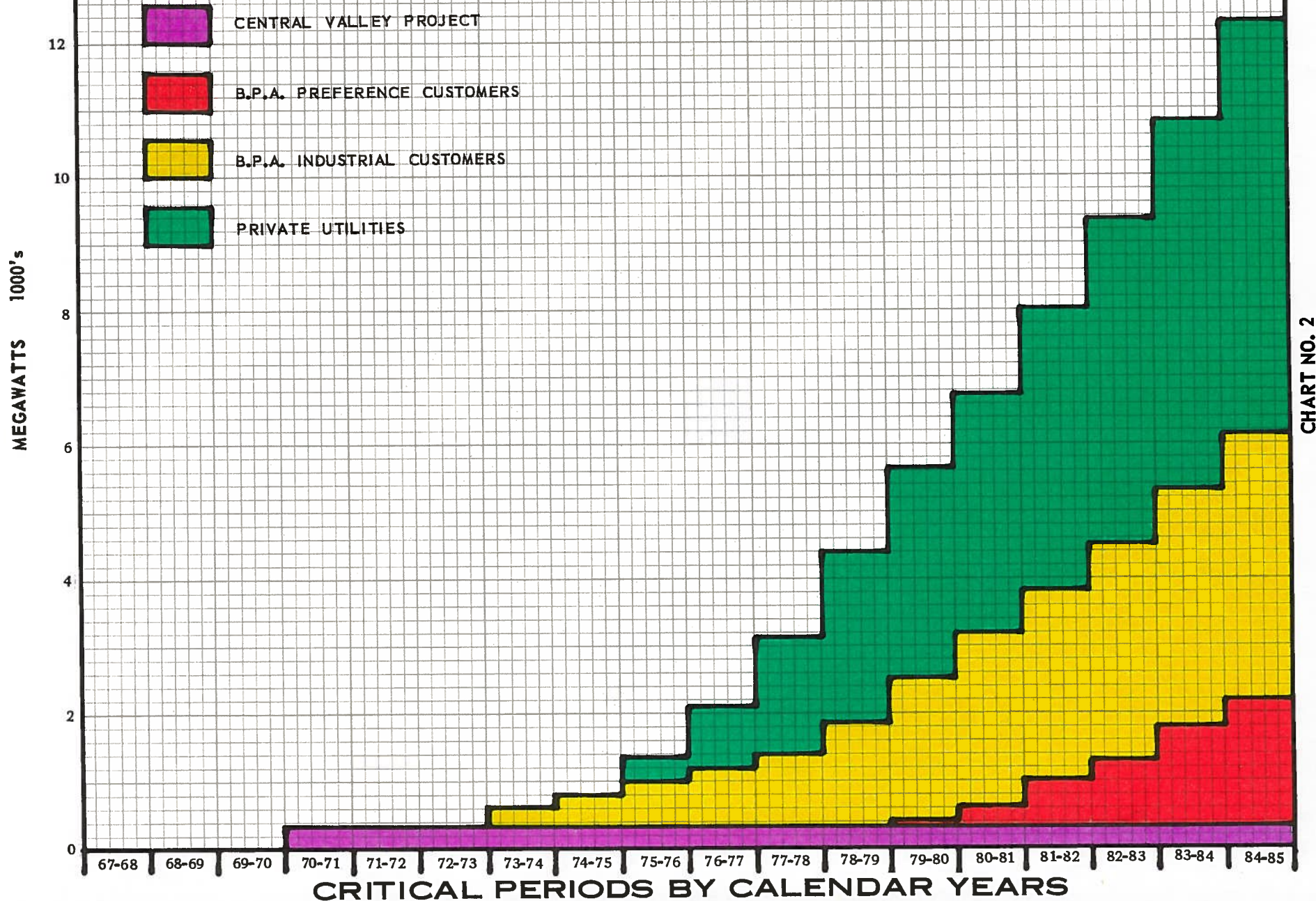
This concludes my report on the WPPSS proposal. I will be happy to answer such questions as time permits. Thank you.

OWH: by

ADDITIONAL AVERAGE ENERGY REQUIREMENTS TO MEET ESTIMATED LOADS

DURING CRITICAL PERIOD & CRITICAL WATER CONDITIONS

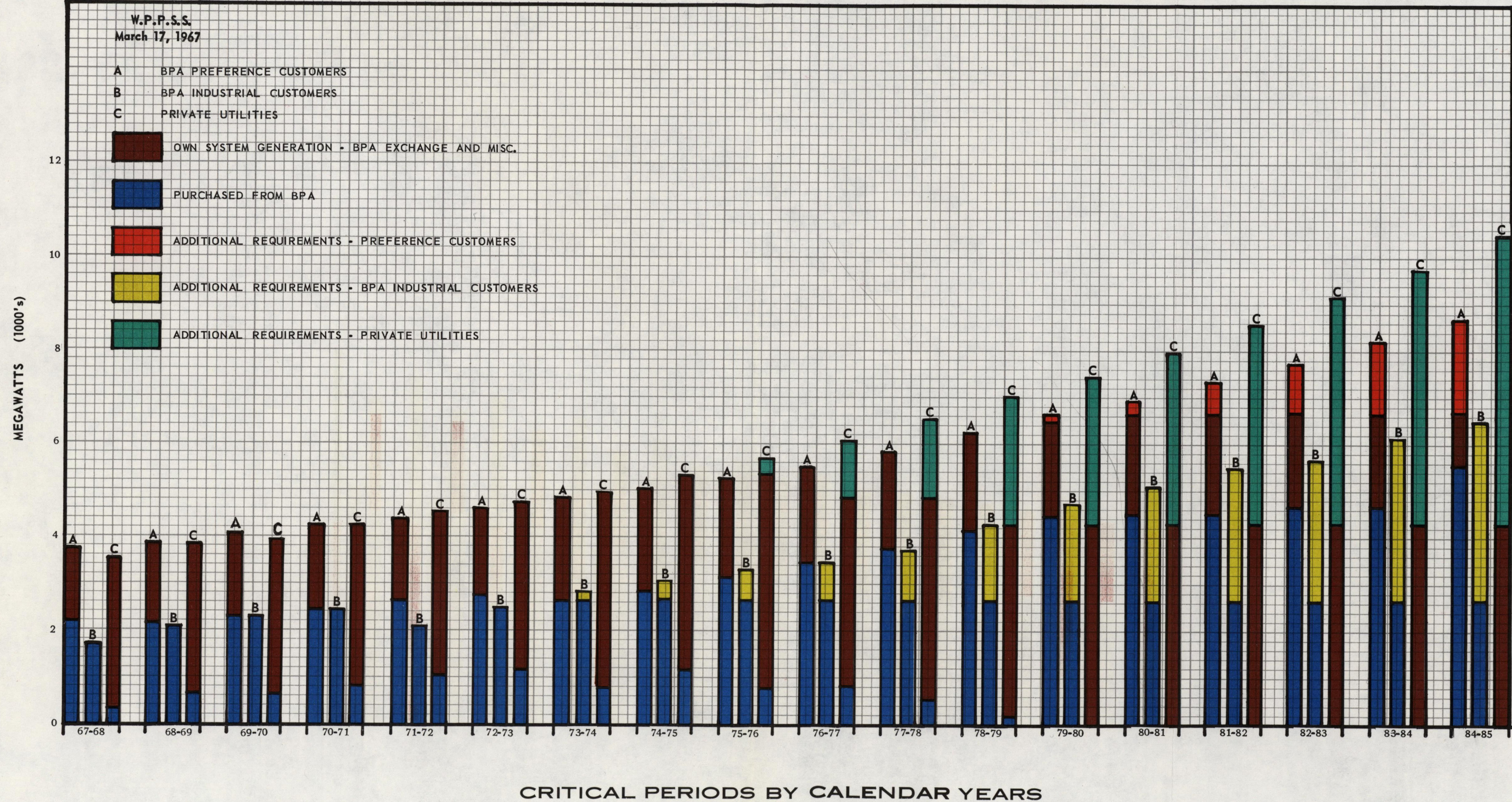
W.P.P.S.S.
March 17, 1967



ESTIMATED AVERAGE ENERGY LOADS

DURING CRITICAL PERIOD AND CRITICAL WATER CONDITIONS

CHART NO. 1





Washington Public Power Supply System

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OWEN W. HURD, MANAGING DIRECTOR

JUNE 5, 1967

NEWS RELEASE

JAMES A. KLEIN, DIRECTOR OF INFORMATION

FOR IMMEDIATE RELEASE

U. S. SUPREME COURT ORDERS

FEDERAL POWER COMMISSION

REHEAR HIGH MOUNTAIN SHEEP DAM PROJECT

THE DECISION OF THE U. S. SUPREME COURT TODAY ORDERING FURTHER HEARINGS BEFORE THE FEDERAL POWER COMMISSION ON THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM'S LICENSE APPLICATION FOR THE HIGH MOUNTAIN SHEEP DAM NULLIFIES AN FPC LICENSE GRANTED FOR THE SAME PROJECT TO THE PACIFIC NORTHWEST POWER COMPANY IN FEBRUARY 1964.

THE RULING OF THE SUPREME COURT TO REMAND THE INTERIOR DEPARTMENT'S CASE TO THE FPC AND NOT REMANDING THE WPPSS CASE LEAVES THE CONSTRUCTION OF THE DAM BY FEDERAL, PRIVATE OR PUBLIC POWER IN DOUBT.

IN ANY EVENT, WPPSS WILL HAVE THE OPPORTUNITY, AS WILL PNPC, TO PRESENT ITS CASE BEFORE THE FPC AT THE TIME THE COMMISSION HEARS ARGUMENTS PRESENTED BY THE INTERIOR DEPARTMENT.

"AS A RESULT OF THIS DECISION," SAID OWEN W. HURD, WPPSS MANAGING DIRECTOR, "THE DEPARTMENT OF INTERIOR HAS BEEN HANDED THE BALL TO START A NEW BALLGAME."

HURD EMPHASIZED, "THAT IT IS NOW UP TO THE INTERIOR DEPARTMENT TO CALL THE SIGNALS, AND CARRY THE BALL IN CONVINCING THE FPC THAT THE HIGH MOUNTAIN SHEEP DAM IS IN THE BEST PUBLIC INTEREST. THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM STANDS

READY TO COOPERATE WITH SECRETARY UDALL IN EVERY WAY TO INSURE THAT THE RESOURCES OF THE SNAKE RIVER ARE BEST UTILIZED TO MEET THE NEEDS OF THE PEOPLE OF THE NORTHWEST."

HURD SAID, 'IN THE EVENT THAT FEDERAL AUTHORIZATION IS NOT POSSIBLE WE ARE CONFIDENT THAT A LICENSE TO THE WPPSS WILL SECURE FOR THE REGION THE SAME BENEFITS THAT WOULD ACCRUE FROM FEDERAL CONSTRUCTION."

CONTINUING, HURD SAID, 'HAD THE FPC DECISION BEEN LEFT UNCHALLENGED AND UN-REVERSED A DANGEROUS PRECEDENT WOULD HAVE BEEN ESTABLISHED RESULTING IN A MONOPOLY BY INVESTOR OWNED UTILITIES OF UNDEVELOPED HYDRO PROJECTS THROUGHOUT THE COUNTRY CONTRARY TO THE PUBLIC INTEREST AND THE CLEAR INTENT OF THE FEDERAL POWER ACT."

THE 670 FOOT ARCH MULTIPLE PURPOSE DAM PROPOSED BY WPPSS WILL HAVE AN INITIAL INSTALLED CAPACITY OF 1.2 MILLION KILOWATTS AND AN ULTIMATE CAPACITY IN EXCESS OF 2.0 MILLION KW AND COSTS WILL EXCEED \$250 MILLION.

WPPSS ESTIMATES THE COST OF POWER WILL BE LESS THAN THAT OF ANY ALTERNATE SOURCE - HYDRO OR THERMAL AND AS A WPPSS PROJECT WILL PROVIDE POWER AND OTHER BENEFITS TO THE REGION EQUAL TO FEDERAL DEVELOPMENT.

WPPSS PLANS CALL FOR THE PROJECT'S FULL INTEGRATION WITH FEDERAL HYDRO FACILITIES AND THE BONNEVILLE POWER ADMINISTRATION'S TRANSMISSION GRID SYSTEM.

THE HIGH MOUNTAIN SHEEP DAM SITE IS 50 MILES ABOVE LEWISTON, IDAHO, ON THE SNAKE RIVER NEAR ITS CONFLUENCE WITH THE SALMON RIVER AND IS LOCATED IN IDAHO AND OREGON. WHEN COMPLETED THE DAM WILL BE ONE OF THE HIGHEST ARCH DAMS IN THE WESTERN HEMISPHERE. A 58 MILE RESERVOIR WILL BE CREATED BEHIND THE DAM WITH USEABLE STORAGE OF MORE THAN 3.5 MILLION ACRE FEET OF WATER. PLANS CALL FOR THE EXTENSIVE DEVELOPMENT OF THE AREA FOR RECREATION AND PASSAGE OF MIGRATORY FISH.

LOCATED AT KENNEWICK, WASHINGTON, WPPSS, BUILDER AND OPERATOR OF HANFORD NUMBER ONE, CURRENTLY THE WORLD'S LARGEST NUCLEAR STEAM GENERATING PLANT (860,000 KILOWATTS), IS A MUNICIPAL CORPORATION AND JOINT OPERATING AGENCY OF THE STATE OF WASHINGTON CONSISTING OF 16 PUBLIC UTILITY DISTRICTS.

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