REVIEW OF RELIABILITY PLANNING PROGRAMS
OF ELECTRIC UTILITY AGENCIES

REPORT
TO

CALIFORNIA URBAN WATER AGENCIES

BY
SPECTRUM ECONOMICS INC.
San Francisco, California

July, 1991
FOREWORD

California Urban Water Agencies (CUWA) is an organization of the larger urban water providers in California, who serve water to communities containing about two-thirds of the state’s 31 million population. CUWA is very concerned about the erosion of reliability of California’s water supplies. This issue has been of growing concern to CUWA’s member agencies over the past decade, but the five-year record setting drought this state has endured has made water supply reliability a universal concern of all of California’s leaders and citizens.

CUWA held a conference on water supply reliability in January of this year to stimulate and formalize discussion on this issue. Following that conference, CUWA announced its intention to sponsor additional research and discussion of supply reliability leading to a recommended planning approach to this critical issue by early 1992.

This report, prepared by Spectrum Economics, Inc. under contract to CUWA, is intended to be a resource to the CUWA reliability project. It brings the important experience of the electrical energy industry to our water industry deliberations in a focussed and practical way. Spectrum was asked by CUWA to review the most important energy industry reliability planning efforts in the western United States, and to relate these experiences to the needs and possible approaches to be taken by the urban water supply industry in California. Further, the review was to provide informal, frank discussions of the characteristics and pros and cons of the energy organizations.

These valuable discussions of the energy planning programs and the experience they might lend to the water industry are provided solely for use by CUWA, its Project Advisory Committee, and other interested parties who are involved in improving supply reliability for urban water users.

California Urban Water Agencies
July 22, 1991

Mr. Lyle Hoag
California Urban Water Agencies
660 J Street #485
Sacramento CA 95814

Re: Review of Utility Reliability Planning Programs

Dear Mr. Hoag:

This report responds to your request for information about reliability planning institutions in the electric utility industry, and how their approaches and experience might apply to the California water supply situation. This report provides CUWA members with a description of types of processes to consider in determining what might best work for the urban water agencies.

The report's overview section describes the organizations reviewed, why they were chosen, and provides a summary of their strengths and weaknesses. We also summarize suggestions as to how the water industry could shape the establishment of a reliability planning agency. We have identified five common factors that were emphasized as central to each agency's success, and discussed factors the water industry needs to consider in determining their goals. We also have included appendices which describe each of the organizations in greater detail. An additional appendix describes the California Collaborative Process, which electric utilities and other groups used to reach consensus on increased conservation goals and priorities.

We began this project by selecting agencies to provide a broad spectrum of: (1) the types of groups represented in the planning process; (2) the formality and openness of the process; and (3) the enforcement power associated with any decisions taken. Agencies were chosen that were organized by the industry itself, and that required establishment by the legislature. We reviewed documents associated with these organizations, and interviewed key personnel within each group.

Each of these organizations were set up to achieve specific goals. While some of these closely parallel water industry goals, others may be very different. Each of these organizations has evolved in response to its own institutional, technical and political framework. The water industry needs to develop its own goals, and in response to its own unique situation, should develop an agency which reflects its own institutions and compromises.

We hope that this report, by detailing the strengths and weaknesses of the electric utility agencies, will assist your members in defining their own organizational goals. Thank you for calling on us for this important project.

Sincerely,

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REVIEW OF RELIABILITY PLANNING PROGRAMS
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1.0 Introduction: Groups Studied and Why They Were Selected

The current and increasing concern about the reliability of California's water supply in many ways parallels the situation in the electric utilities in the late 1960's and early 1970's. California Urban Water Agencies (CUWA), a coalition organization of California's largest urban water agencies, is interested in developing a more adequate state-wide reliability planning process for the urban water industry. To assist CUWA members in deciding what kind of planning approach will best suit their needs, we have reviewed the ways in which the electric utility industry responded to its earlier crisis.

The recent experience in managing the drought has shown that water agencies cannot ensure reliability by working in isolation. One effective approach to improving water utilities' reliability planning is to give statewide responsibility for this planning function to one or more agencies. There are two possible ways to approach the development of a reliability planning agency; (1) through a state-wide, legislatively-mandated program; and (2) through an industry-directed voluntary program that could be state-wide, or could be limited by facility -- for example, to those water agencies who take water from the State Water Project. To explore these options, we selected four energy organizations to review. These were chosen to provide CUWA with a broad range of workable approaches to the challenge of reliability planning. The groups range from a small, informal industry group which required no legislative foundation, and has no enforcement power other than peer pressure, to a large, formalized regulatory process, requiring establishment by the legislature, and with

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1-This report was authored by Wendy L. Illingworth, Senior Economist, and William W. Wade, Vice President, of Spectrum Economics, Inc.
enforcement powers. The benefits and weaknesses of each of these organizations have been reviewed. Common factors which have enabled the groups to be effective have been identified. Suggested next steps for CUWA in continuing its development of better reliability planning are recommended in Section 5.

The four energy planning organizations which we reviewed are:

- The California Power Pool, a small, informal group of the largest investor-owned electric utilities in California. It has no enforcement power, and no permanent staffing. Membership is voluntary, and no public reports are issued unless requested by the regulatory agencies.

- The Electric Reliability Councils, which we reviewed both at the continental and regional level. California is in the Western Systems Coordinating Committee or WSCC. These groups are more structured, with minimal but growing public reporting. Membership is voluntary, and there is no enforcement power. There is a limited permanent staff (20 at each of the continental and regional levels).

- The Northwest Power Planning Council (NWPPC) was established by federal legislation. This group is much more structured, with a strong emphasis on public involvement and information. Its responsibility is to develop a regional power plan for the Pacific Northwest. Enforcement of compliance with NWPPC plans by individual utilities is limited, but any utility which wants to benefit from federal hydro power must make some effort to comply. Compliance is gained mostly through
funding -- for example, of approved conservation projects. NWPPC has a larger staff (77, including Councillors), and a budget which includes large amounts for public information and wildlife protection programs. It also has had a great deal of experience working with federal agencies such as USBR and the Corps of Engineers.

The California Energy Commission was established by State legislation in 1974. This body is the largest, most structured and formal of the organizations we examined. It has a staff of approximately 500 people, and has some enforcement power. It provides a "one-stop" permitting process for any thermal power plants it determines are required to ensure reliable electricity supply. It also has broad responsibilities for evaluating needs for new resources and planning for State-wide energy reliability. It has a particularly well-developed procedure for planning for electric reliability. The 1992 Electricity Report (ER-92) is now in its initial scoping phase, where the interested parties identify those challenges which will likely require most attention over the planning horizon. This is followed by investigations into demand and supply options, which result in an estimate of the future need for new resources, and recommendations of the form these resources should take. These policy recommendations are contained in an Energy Agenda, which is forwarded to the Governor. He must respond to the recommendations contained in this document within sixty days. This forces the Administration to confront important energy issues on a regular basis, and gives additional credibility and force to the CEC's recommendations.
Individuals we contacted at these groups were supportive of the idea of a formal water reliability planning process. Several pointed out that there was an obvious need for some such planning body; they speculated that if the water industry did not take the lead in this, other agencies (such as the growth management or regional planning groups, or EPA) might do so.

In addition to these four reliability agencies, we reviewed the workings of the California Collaborative Process. This procedure is an example of an approach to consensus-building which involved environmentalists, electric utilities, and regulators negotiating an agreement on conservation goals, priorities and programs to be instituted by the utilities. The resultant agreement also provided financial incentives for the utilities to achieve the established goals. This process has a parallel in the Three-Way water agreement discussions now underway between urban and agricultural water interests and environmental groups.

In reviewing this consensus process, as well as in our interviews at the CEC and the Northwest Power Planning Council, we were referred to Mr. Ralph Cavanagh of the Natural Resources Defense Council, who was praised as an energetic and pragmatic participant in reaching consensus solutions to energy problems. A reliability planning process for the water utilities could benefit from the experience gained in the California Collaborative Process because it involved forging a consensus between utility, environmental, and other public interest groups.

1.1 An Overview of the Reliability Planning Process.

Electric utilities in particular have a well-developed process for planning for reliability. The process outlined below is based particularly on this example, but the general procedures for reliability
planning apply to all infrastructure utilities. The process begins by producing a forecast of demand, which is compared to current and planned firm supplies to determine whether reliability standards are met. If so, then this iteration of the process is concluded. If not, alternate resource plans are developed and examined to determine if their relative costs and benefits justify their inclusion in the utility’s plan. If the added resources are justified, they are added to the utility’s future action plans; if not, the reliability standards are reassessed in the light of this cost information. A flow chart of this process is shown in the figure on Page 6. Any reliability planning process should be structured to facilitate this.

Our review identified several institutional factors which are important for a successful agency to provide. These are:

- A forum for discussion of technical issues in a non-adversarial, non-legalistic framework. This forum could be used to develop consensus to the degree possible;

- A method for concentrating on and resolving those issues on which consensus could not be reached;

- Broad participation to increase the legitimacy of the results; and,

- A public information and lobbying program to further acceptance of, and to encourage implementation of, the resulting plan.
The Reliability Planning Process

1. Forecast demand
2. Compare to firm supplies
   - Are Reliability Standards met?
     - Yes: Review concluded
     - No: Cost of shortage analysis
       - Develop alternative resource programs (supply and demand-side)
         - Are added resources justified?
           - Yes: Add programs to action plan
           - No: Reassess established reliability standards
2.0 Possible Organizational Structures for a Water Planning Group

The selected organizations reviewed provide the water agencies with useful models to consider when designing their own reliability planning agency. The strengths and weaknesses of the organizations vary, and the water industry should decide which would best suit its needs. A hybrid containing elements from each of the agencies might yield the best model for water. In prior memos, we examined two voluntary and two legislative models; a summary of the relative advantages of these models and their possible implementation in the water industry is provided below:

2.1 Non-Legislative Solutions

A. The Power Pool Model

A water group following this design could be set up by a subgroup of utilities with either common facilities, common reliability problems, or simply a common interest in improving reliability planning. Two possible examples which spring to mind are a reliability subgroup of the State Water Contractors (SWC), or a reliability committee of CUWA. A SWC group also could be useful in facilitating water transfers and conjunctive use, and in evaluating and promoting cost-effective conservation among member agencies. However, it would only be effective in addressing approaches to reliability based on water supplied south of the Delta. This would leave the important Sacramento Valley water supply out of the puzzle.

The CUWA group would be able to concentrate on urban conservation issues. It could act as a clearinghouse for information on technical issues. It also could guide member agencies in conservation program design issues and provide uniform reporting of program results to encourage
the sharing of these results between agencies. It also could provide a technical pool of knowledge in such issues as water reclamation, conjunctive use, contingency planning, rate design and demand forecasting. It could provide a united group for discussions with agricultural water districts for water transfers, and with environmentalists, on wildlife mitigation programs.

Either group could provide the advantage of speaking with a single voice for a large group of the major water agencies. Other advantages of the Power Pool model include: the ease with which it could be instituted because it would emerge as a committee within existing groups; its low cost, because there would be little requirement for extra staffing; and the slight loss of water agency independence that would result. The disadvantage is that it would provide no enforceable solution to the most serious problems faced by the industry -- building a consensus on approaches to the Delta. The Power Pool model would not involve any groups outside the water industry, which is an advantage because it increases the ability to reach consensus, but is a disadvantage because the consensus reached will have less political weight. There would be limited or no ability to implement any reliability standards set, because of the lack of enforcement power, the limited participation in the group’s decision-making, and the limited inclusion of the entities which control water supplies.

In summary, the advantages include ease of implementation, low cost, and little loss of independence. The disadvantages include the limited issues which such a group could address, and the lesser credibility of groups with such limited membership.

B. The Reliability Council Model

This model would involve all water utilities in the State. The advantage of this form of organization is that it would provide a forum for the widest possible inter-utility coordination. Urban
agencies could cooperate on conservation programs; irrigation districts could coordinate rural conservation programs; all agencies jointly could work on programs to facilitate water transfers and conjunctive use programs; and the larger utilities could assist the smaller utilities in the development of planning processes and conservation programs. An all-inclusive body such as this would have greater weight when dealing with State and Federal agencies over issues such as water release policies.

One major disadvantage is that this type of agency would be more difficult to form because it would require the agreement and participation of a larger number of utilities. There are 6,965 water agencies in California\(^2\), 37% of which (2559) serve fewer than 200 connections. The ongoing CPUC investigation into the financial and operating risks of small water utilities (I.90-11-033) reveals that some clear "rank ordering" of utilities would be needed. The CPUC identifies 159 water utilities with 10,000 or more connections. This may still be too large a group for a productive organization. One possible solution for a proposed reliability agency would involve having classes of memberships, with the smaller, isolated utilities being associates rather than full members. Another possibility would be to have the counterparts of the "regional councils" based on size, rather than geographic location. The smaller water groups are much more likely to have problems in common with each other than they would with the larger utilities. While it could be developed as a subcommittee of ACWA, this would be inadvisable for two reasons: first, its importance should be such that it should not be a subsidiary organization; and second, ACWA's basic role as a lobbying agency would undermine a reliability agency's necessary position as a disinterested, technically-oriented group.

However, ACWA's current drought education and awareness campaign is an example of what a group like this can achieve.

This form of planning group still would have the advantages and disadvantages associated with membership that was restricted to the water industry. However, if the industry was not prepared to accept a legislative solution, this model would provide some additional benefits in being more broadly inclusive than the groups discussed under the Power Pool model. This would make it more able to address and resolve a broader group of the issues facing the water industry. It's all-inclusive nature would give it greater credibility and weight when speaking on the issue of California water reliability.

In summary, the advantages of this model spring from its wider inclusion, which would increase the issues which could be addressed, and the group's credibility as a representative of California's position on water questions. It maintains much of the independence of the individual utilities, and would provide a strong alternative if the industry decided to oppose an impending legislative solution. The disadvantages include the unwieldy nature of such a large membership, and the exclusion of stakeholders outside the industry. This model would be more costly than the Power Pool Model, but possibly less expensive than a legislative alternative.

2.2 Legislative Solutions

Two legislative options were reviewed -- the Northwest Power Planning Council (NWPPC) and the California Energy Commission (CEC). The initial workings of these groups were very different: the NWPPC began with a massive education effort to develop shared knowledge and approaches to use as a basis for consensus, whereas the CEC's initial impetus was to oppose the
utilities, both over the level of future resource requirements and over attitudes to conservation. Despite these diverse beginnings they have evolved into much more similar organizations. The major differences between the CEC and the NWPPC models are the importance of the hearing portion in the total process; much more of the CEC’s work takes place in hearings. In addition, the Commission has focused more on the individual utilities, developing demand forecasts and conservation targets for each, whereas the NWPPC treats the region as a single entity. This overcomes a large part of the problems arising from the many small utilities. Further aspects of a legislative solution are discussed in Section 3.0 below.

It also should be noted that Senator Mark Hatfield of Oregon has proposed the establishment of a regional water agency in a bill currently before his U.S. Senate committee. This bill calls for a commission to conduct a five-year review of western states’ water policy, with particular emphasis on allocation policies. The commission would be staffed by congressional members and appointees, and would report to the Secretary of Interior to recommend policy changes. This bill has been co-sponsored by Senator Bradley, who is in the process of scheduling hearings for the bill. Senator Hatfield’s staffers have suggested that the Senator proposes to amend the bill to call for a national agency. California water groups should monitor the progress of this bill, and determine what changes would be required to make the proposed organization acceptable. At the moment, the bill does not appear to have a high probability of success. If this situation changes, the California groups should be prepared to make a joint lobbying effort to modify the bill.

There also are two bills before the California State Legislature to expand the DWR process. One of these, AB 1753 (Farr), would require DWR to develop a common forecasting methodology based on end-use analysis, and use this methodology to forecast demand for each area of the State.
The goal of this forecast is to enable a thorough evaluation of the potential for conservation programs to meet future resource needs. DWR apparently has expressed a disinclination to undertake this work, and because the analysis is estimated to cost one million dollars, the bill currently is stalled. The proposed Cortese Bill (AB 799) would be more closely aligned to the present DWR process. Its goal is to tie the 160 process to the Census cycle, and to increase public input by requiring a public hearing process as part of the Bulletin 160 preparation. The bill also proposes that an initial draft of the report would be available for public comment before the report was made final.

In addition, AB 1704 (Eastin) proposes the establishment of a task force, chaired by the Secretary of Resources to review demand and supply forecasts and develop a water plan to recommend to the legislature. CUWA should evaluate the benefits of all of these legislative initiatives. They should be reviewed in the light of what the industry wants to achieve, and what we have learned about both the process and the institutions of reliability planning. The industry should be prepared to lobby to change those aspects which they believe would be less useful for the industry.

A. The Northwest Power Planning Council Model

It is unlikely (and doubtless undesirable) that a California water reliability group would be instituted by Federal legislation. Disregarding this aspect, there are many other aspects of this organization (NWPPC) that could prove useful for California water planning. One of these involves the NWPPC’s planning for the region as a whole, rather than on a utility-by-utility basis. We can envision a body which would forecast state and regional demand for water, identify alternatives to meet these demands with reliable supplies, and promulgate an action plan to meet these demands with a mix of resources. Such a group would involve rural and urban consumers, environmentalists,
and staff from State and Federal Agencies. It would investigate options for water conservation, reclamation, transfers and conjunctive use, fish and wildlife protection and new facilities. These investigations would entail the production of issue papers by technical advisory groups, followed by public comment and hearing processes. This could culminate in the production of a State Water Plan, which it would forward to the Governor for his approval. A bill currently proposed by Assemblyman Eastin shares many of these ideas. However, the Eastin proposal would involve a one-time commission, with no permanent staff or provision for an ongoing process.

This State Water Plan would specify what savings were to be expected from what conservation programs, and what benefits would be possible from other water programs without specifying which utilities would be required to undertake them. Having developed a State Plan, this agency would work with various water agencies and departments to encourage implementation of the adopted plan, but it would be up to each individual water utility to work within the guidelines of the Plan to achieve reliability for its consumers. Funded by a levy on water consumption, the agency would provide financial assistance and incentives for the various groups to fulfill their part of the Plan. Because water utilities are not nearly as interconnected as electric utilities, compliance with the plan might still leave individual utilities failing to achieve reliability. These utilities would need to petition to be treated as special cases within the Plan.

The advantage of this form of organization is that it would involve all stake-holders, and develop more complete solutions to California’s water problems. The NWPPC has a strong fish and wildlife mitigation program, and provides a source and channel for funding for improvement of fish habitats. This should encourage environmental participation. Because it concentrates on the overall State situation rather than developing utility-by-utility analysis, it would overcome the problems of
attempting to deal with the numerous small utilities. In addition, the ultimate responsibility for the individual utility’s plan stays with that utility, so this form of organization minimizes the loss of independence on the part of the utilities. However, it does entail some loss of utility independence. This organization could conceivably insist on conservation programs that a utility did not perceive as cost-effective, or require spending on fish protection above what a utility might willingly pay.

In many ways such a program parallels some different aspects from both the DWR Bulletin 160 and the SWRCB Bay-Delta hearings. The Bay-Delta hearings have the mandate to develop a plan of action, but it has no regular review process. It is invoked only at times of recognized crisis. A reliability planning process should avoid such crises from occurring. Because it has little developed procedure or shared knowledge such as would exist in an ongoing process, the SWRCB has been less-focused than it might have been. In addition, the combination of the water rights adjudication and the Plan development has led to a judicial approach to hearings and less emphasis on preliminary consensus-building and technical collaborations. The development of the working groups in the later stages of this process has begun to move closer to the models we have outlined above. Because of its necessarily narrow focus on the Bay-Delta region, it has given less attention to other aspects which should be included in a State-wide plan.

The DWR process fulfills the requirement of having a regular review of demand and supply. However, unlike the SWRCB process, it has no enforcement power. There are two major differences between our notion of the process to produce a State Water Plan and the DWR Bulletin 160 process. These are:
• Development of demand, supply and conservation forecasts is an open process, with a structured method of involving a broad range of professionals; and,

• The final product is an action plan with some support to encourage further action. This support could take the form of official adoption or endorsement of the plan as State policy, or some enforcement powers. While the DWR Bulletin is delivered to the Legislature, there appears to be no requirement for the Legislature, the Administration or the Water Agencies to act on this plan.

In addition, past forecasts of regional and State water use have been low with some consistency. A more public process could assist in overcoming this problem.

In summary, the advantages of this model spring from its inclusion of all stakeholders in the process. This further increases the issues able to be addressed, and the group’s credibility as the California’s policy-maker on water questions. It avoids many of the problems associated with the sheer number of water agencies in the State, and maintains some independence of individual utilities. It also could provide a unified source of funding for wildlife protection. The disadvantages include the undoubted loss of independence that would occur; such a body could give the utilities a less reliable water supply than they believe they need. It also could be a much more expensive option.

B. The California Energy Commission Model

This model has the advantage that it is familiar to legislators and the State Administration. Its overall design was copied for the recently-established California Waste Management Board. CEC
planning operates on a two-year cycle, which begins with an evaluation of the major uncertainties facing the industry. This is followed by:

- a fuels forecast which helps set the prices to be forecast;
- a demand forecast;
- an evaluation of conservation potential and achievements;
- a reliability assessment;
- and an evaluation of the types of new generation which should be approved as necessary and cost-effective.

At each stage of the process there are hearings which must be attended by at least one Commissioner. In addition, there are less formal technical workshops and one-on-one interactions between utility and CEC staff. The technical workshops are open to the public, and are becoming an increasingly important part of the process. These workshops usually are called to investigate specific topics, and to determine what aspects can be reached by consensus, and what must be argued before the Commissioners. In some cases, for a particularly complex subject, the workshops will precede the hearings; in other cases, a Commissioner will suspend a hearing and direct that a workshop be held to develop a more-complete understanding as a basis for the hearing to continue. The final product is a biennial report which details State priorities for fuels, conservation, and future generation for the next 20 years.

Because of the division of responsibilities between the CEC and the CPUC, the CEC has little short-term enforcement power; it cannot coerce utilities into undertake construction or conservation programs. However, it can refuse to permit construction of a power plant if it deems
that the requesting utility has not met its conservation obligation, or because it does not accept the validity of the utilities’ demand forecasts. This was the case in the 1970’s. An initial goal of the CEC was to determine whether the utilities’ forecasted need for additional nuclear and coal plants was justified. In controversial decisions, the CEC refused permits for these planned units on the basis that they were not required. The passage of time has demonstrated that these CEC decisions were correct, and they saved ratepayers a great deal of money. Today, this situation has turned around completely, with the CEC approving permits for non-utility generators to construct power plants the utilities argue are not required. Although CEC staff has opposed much of this non-utility generation, the Commissioners have ruled that a diversity of power sources is desirable.

The CEC plays a smaller role in environmental issues than should a water entity. It sets standards and procedures for environmental mitigation at new plant and transmission sites, but other than that has merely an advisory role over issues such as clean fuels and cleaning up existing plants.

In summary, this model shares many of the advantages of the NWPPC model, and is more familiar to the Legislature and the Administration. Its disadvantages are that it focuses more of the responsibility for planning on the regulators. This further diminishes the individual utility’s independence, and poses problems due to the numerous water utilities which would be involved. Because it would be less-focused on environmental mitigation, it would be less able to deal with these issues. This less-activist role in spending for environmental programs would mean that the utilities would be less likely to be coerced into supporting these. However, any successful water reliability agency would need to take a more high-profile position on environmental questions than the CEC has to date.
3.0 Strategies for Implementing a Legislative Option

Should the water industry prefer to seek a legislatively-authorized body for reliability planning, the key individuals in the energy industry who we interviewed had several suggestions which could be used as general guides:

- The water industry should be prepared to act, and should do so at the right moment. The Warren-Alquist Act establishing the California Energy Commission would not have become law if an existing bill was not available to take advantage of widespread attention focused on energy as a result of the 1973 OPEC oil embargo. The drought would indicate that this is an opportune time to raise the issue of a reliability agency. Certainly if it rains heavily next year there will be less public pressure for the legislature to act. However, the budget crisis will act both to distract attention from your goals, and place economic limitations on what individuals are prepared to support.

- While there are some benefits to establishing a new agency which will lack the history and problems of any existing agency, there are also disadvantages to this option. The budget crisis will make the establishment of a new agency less acceptable. Further, an administrative reorganization would be necessary to move responsibilities from an existing agency to a new agency, and this is always problematical; in fact, it has seldom been achieved. It will be instructive to watch the progress of the Cal-EPA reorganization that currently (July 1, 1991) is proposed by the Governor. In addition, a new agency will face initial organizational and personnel problems which could be minimized by revamping an existing group.
Any such group most likely would fall under the Resources Agency. This would have many advantages. The CEC formally falls under the Resources Agency, so some benefit might be gained from the experience of CEC Staff. On this subject it might be best to tread carefully, for two reasons: first, the Resources Agency appears to think that the CEC has not been sufficiently mindful of the Agency's authority; and second, staff borrowed from the CEC might be less sensitive to important differences between the energy and the water industries.

It also may be desirable to have such a group in the Resources Agency with three other agencies closely related to this issue. With the State Water Resources Control Board (SWRCB), the Department of Water Resources (DWR) and the Department of Fish and Game all responsive to the same Secretary, hopefully it would be easier to get all of these agencies working in a coordinated manner towards the same goals than if the agencies were spread between agencies. For example, the Secretary might be required to adopt a State water plan as agency policy.

Expanding the role of either DWR or SWRCB should be considered as an alternative to setting up a new group. DWR already has some nominal responsibility for water planning, but this has not been fully exercised because of a lack of staff and funding, and interpretation of the Department's charge. Some water utilities have expressed concern over the possibility of giving this responsibility to SWRCB, and having the same agency responsible for adjudicating water rights and reliability planning. They seemed to fear that the responsibility for water planning could inappropriately influence adjudicatory outcomes.
• The water industry should approach both Administrative and Legislative branches of government to lobby for any desired water planning agency. Both will need to support the idea if it is to be implemented. Current legislative attention is focused on the Budget, so earlier efforts might concentrate on the Administration. Two suggestions were made for initial actions that could be undertaken. These were: a retreat attended by key legislators, administration players and stakeholders to consider options; and a Blue Ribbon Commission to report to the Governor on principles to guide water reliability planning. These are discussed in more detail in the accompanying reports (particularly the CEC report) and need not be mutually exclusive.

• Stakeholders in addition to the urban water supply industry (particularly agricultural interests and environmentalists) should be involved in the process. Each has the political clout to block any proposal that they find unacceptable, so they should be brought on board at an early stage.

• Any reliability planning group should be required to present a report to either the Governor or the Legislature on a regular basis. This report should contain policy recommendations to which the recipient should be required to respond. For example, the Governor is required to approve the CEC's proposed policies and goals within sixty days. This has three major advantages: first, it acts as a focus for group efforts and imposes a deadline by which consensus must be reached; second, it demands high-level attention to these issues on a regular basis; and third, policies which have been accepted or approved by the Governor will be given much greater weight by other State and Federal agencies.
4.0 Common Factors Contributing to Organizational Success

Several features which were seen as crucial to the success of a reliability planning organization were commonly identified by many of the groups we reviewed. We have summarized these below because we believe that any successful water reliability planning agency should also share these factors.

4.1 The Importance of Technical Excellence

The main common feature shared by all of these organizations was a belief that ultimately the extent of their influence on the member utilities depended on the technical excellence of the work produced by the groups. No matter what enforcement powers the body did or did not have, the individuals interviewed all came down to the bottom line that institutions or bureaucracies must be convinced of the validity of any recommendations or policies. If this is not the case, individuals within those organizations will find ways to avoid or delay indefinitely any implementation for which they are responsible. In contrast, involving members or outside groups in a process with recognized superior achievements leads to both wide acceptance of the results and more enthusiastic implementation of any recommendations. In some cases, the technical expertise was provided by staff of the member utilities and their consultants working with or for the organization. In other cases, the technical ability also was provided by permanent staff retained by the group.
4.2 The Importance of Consensus-Building

Another common feature was the emphasis on building consensus before reaching decisions. We pressed the individuals interviewed to detail drawbacks associated with effort put into consensus processes. However, they generally stated that although it always seemed to require additional effort and time-commitment, the resulting solutions seemed always to justify this added cost. The only case where this was not so was in the Western Systems Coordinating Committee. In this case, one utility spokesman complained of a "U.N. syndrome" where too many utilities of disparate sizes and interests were required to reach agreement. The costs and benefits of many agreements might not affect many members, while being of extreme importance to others. Some staff stated the opinion that this allowed some members to act irresponsibly without risking any return for that behavior.

The CEC was not established with consensus in mind; indeed, a major impetus to its formation was to prevent the utilities from constructing additional nuclear units. While utilities still oppose many of its decisions, the CEC has moved away from strong reliance on more adversarial hearings to depend more on technical workshops where opposing groups can determine what factors they can all accept, and what remain to be determined in the hearing process. To a large extent this pattern has been copied with the development of the technical work groups within the Bay-Delta hearing process. Similarly, the NWPPC focuses on developing maximum consensus within its technical advisory committees, both to minimize the necessity for the NWPPC to make controversial decisions, and to maximize the participants' commitment to the final outcome. Participants in the NWPPC process often have reported surprise at the level of consensus that they were able to achieve once they shared a common knowledge pool. The Collaborative Process is another excellent example of consensus building among groups with diverse agendas.
4.3 The Need for Effective Communication

There is strong and growing emphasis on the need for effective communication with the public and its representatives and interest groups. Both the CEC and the NWPPC have this as a basic goal. The WSCC has recognized this requirement by the recent formation of its Public Information Committee and the production of an attractive biennial report which highlights the Council's responsibilities and recent achievements. The CEC and the NWPPC were particularly convinced of this need. They believed that the contributions of graphic artists and professional writers were essential to keeping the public and legislators informed. The NWPPC and the CEC also place strong emphasis on the need to lobby both federal and State legislators. This is not the case for the other two bodies, because other groups in the electric utility industry perform the lobbying function for their members. Individuals from both the CEC and the NWPPC stressed that money spent on effective written communications is seldom wasted.

4.4 Provision of Technical Support

All of the groups give technical support to their member utilities. This is much less the case in the California Power Pool, where each member is a sophisticated large utility with highly-trained technical staff. Even in this case the utilities review each other's work and collaborate, both on technically complex studies, and where either the data is provided by or the results affect more than one utility. The reliability councils are particularly strong in assisting member utilities, because of the range of technical abilities among its members. The NWPPC and the CEC also provide technical guidance, either through the development of specific techniques or algorithms to be used in
evaluating resources, or by providing forums for technical specialists to meet with their counterparts in other organizations.

The groups also have developed standard methods of procedure to assist reliability. These range from contingency plans which describe each member's responsibilities under specified emergency conditions (the Power Pool and the reliability councils), to methods for evaluating the reliability or cost-effectiveness of resources, including demand-side management (the NWPPC and the CEC.)

4.5 Efficiencies Through Central Data Collection

In addition, the groups serve as data depositories for their members. Data availability within the water industry is relatively poor and uneven, and steps to remedy this would be very valuable. Once again, this characteristic is less the case with the Power Pool, although these utilities do share information concerning their respective loads. The reliability councils serve as a source of generation unit reliability, of planned loads and resources, and of technical specifications for equipment. They also provide a forum for transmission simulations, an extremely complex task which requires data from more than one utility before it can be performed adequately. The NWPPC and the CEC provide data and analysis on conservation and other resource technologies, with the CEC in particular requiring annual extensive data filings from utilities and individual large energy users.

This centralizing of data enables sharing of information and analysis which would not be cost-effective or possible for the utilities individually. For example, if a single utility wanted to investigate the reliability impacts of some new technology, contacting each utility with that equipment and
evaluating their experience would be costly and time-consuming. In addition, without a requirement to report in a standardized manner, the individual utilities might not record the information, or might record it in a way which limited its usefulness. With NERC's databases, this type of analysis could be performed easily and quickly. Similarly, a standardized analysis of conservation programs both assures that the usefulness of the results are maximized, and allows another utility to make an intelligent analysis of how its system would be impacted by a similar program.

5.0 Implementing a Program: The Next Steps

An early question to be addressed is whether the voluntary and legislative options are mutually exclusive. We would argue that this is not the case. In particular, work by reliability subgroups following the Power Pool model should begin immediately, to avoid losing time. Conceptual development and empirical estimates such as MWD’s reliability assessment and CUWA’s investigation into the impact of drought on industry will provide useful input to whatever form of reliability planning program is developed. CUWA could form its own reliability committee, and encourage its member agencies to review their own reliability assessments and contingency plans. In addition, CUWA could explore the value of encouraging similar committees among groups of water agencies associated with large shared facilities, such as the State Water Project and Hetch-Hetchy. These could explore wider coordination in the areas of water transfers and conjunctive use. We suggest that another action step could be to convene a meeting or conference of dam operators to discuss the impact of dam operations on reliability, and what we have learned from the experiences of the last year, as suggested by PG&E operating personnel. The goals of this meeting would be:
first, to share information and compare methods of determining reliable operating criteria; and second, to explore the possibility of developing a set of principles to guide dam operators in future.

Another question to be answered is whether the utilities want to promote a legislative solution. The advantages of the greater credibility and enforcement which could come from a regulatory framework must be weighed against the inevitable loss of individual authority it will entail. To a large extent, the resolution of this trade-off depends on the answers to another question:

What results are expected from the current Three-Way water policy discussions between urban agencies, agricultural interests, and environmentalists?

If the Three-Way discussions appear to be likely to lead to a solution of most of the supply problems facing the water industry today, there would appear to be little to gain in return for the utilities’ loss of authority. In fact, a regulatory body imposed on these discussions could negate whatever progress has already been achieved. If, however, these discussions appear able to solve only limited issues, the potential returns from a legislated solution will be much greater. In this case a legislative process could be supportive of the gains in the Three-Way discussions, and the outcome of these ongoing conversations could become the kernel of a developing reliability process.

A further related question is whether a legislative solution should be imposed on the industry by either State or Federal legislators. At this time we believe an imposed legislative solution appears unlikely, given State legislators concentration on budget and other issues. However, another year of drought could change drastically the focus of State legislator’s attention. Similarly, although Senator Hatfield’s bill (see Section 2.2 above) currently does not appear to have a lot of momentum, this issue
should be investigated so that California can respond if this situation changes. If the water industry decides it does not want a legislated solution, it should prepare a strategy to deflect both this possibility and the possibility that other agencies might take over this responsibility. In this case, the water industry should organize a strong voluntary body along the lines of the reliability councils. It should also prepare a strategy to deal with any legislative proposals which might be brought forward.

Whether or not the water utilities want a legislative solution, they should:

- review and be prepared to influence and shape any bills proposed in either State or Federal Legislatures in the light of what is needed for the industry. Currently proposed are the Hatfield, Cortese, Eastin and Farr bills;

- monitor the situation on both State and Federal levels; and,

- decide on the form and location (within the State Administrative structure) of the agency preferred by the industry.

The water industry also should begin the groundwork to introduce its ideas to the stakeholders and other interested parties to gain their input and support. Initially, this would involve speaking informally or semi-formally with individuals in the water utilities, water consumers (particularly industry and agricultural organizations), the environmental and public interest organizations, legislators and administrators. This would assist the industry to gain a firmer idea of what might be possible or desirable, and prepare the groundwork for a workshop along the lines suggested by Chairman Imbrecht of the CEC. The goal of this retreat would be to have the main
stakeholders explore the idea of your proposed agency, both to allow you to gauge the support for its various aspects, and also to begin to educate and bring on board those people who will be essential to the process. If the industry does not want a legislative solution, a similar workshop might be planned, but it should be delayed until it appears obvious the legislature needs to be influenced.

Another issue which could be explored at such a retreat would be the advisability of a Blue Ribbon Commission. Assemblyman Eastin has proposed such a Commission, but his proposal envisions that the Commission would investigate the issues and develop a State Water Plan for presentation to the legislature. This seems a very large task. Our proposed Commission would be much less ambitious, focusing on identifying the problems that need to be solved and recommending an approach for their solution. Our current opinion is that this would only be useful if the process appeared to be heading in a direction opposed to your goals. For example, if you wanted a regulatory body and were meeting with resistance, a Commission could keep the idea alive and amass supporting evidence. Alternately, a Commission might be a diversionary method to postpone any decision until legislative attention became distracted. If the process is on track without a Commission, it would seem to impose an unnecessary delay.

If the industry decides that it needs a legislated solution, it should move immediately towards the next step, which would be to compare and contrast both the SWRCB water rights adjudication process and the DWR Bulletin 160 process, both with each other and the models described above. This would assist in determining which could best be expanded to fulfill the full planning process, or whether a new body is needed. This decision would depend partly on the process itself, partly on the institutional framework and also importantly on the staff at each agency.
The features of the preferred model also should be explored. The two legislative models we presented represent two out of four possible combinations of roles you should consider. These are:

- Weak enforcement of individual utility decision-making for resources, but strong on environmental issues (the NWPPC model);
- Strongly enforcement of individual utility resource issues, but weaker on environmental decision-making (the CEC model).

The other two possible combinations are:

- Weak enforcement of both environmental and resource issues; and,
- Strong enforcement of both issues.

The water industry needs to decide which of these combinations it prefers, and which it believes will be acceptable to other stakeholders. It also should explore what options in organizational structure, funding sources and levels of funding which would allow the agency to fulfil this role. Of particular importance is the strength and nature of any enforcement powers it may be given.

Other aspects of the water reliability planning agency should be explored. Two which pose important difficulties are: to devise a structure with which to deal with the numerous and diverse water agencies in the State; and to design a process which will encourage the building of consensus, rather than confrontation. In this area, it could be useful to examine the workings of the technical advisory committees in the NWPPC process, and the organization of the California Collaborative Process. Participants in both of these groups reported that disputes over procedural issues caused initial problems which have since been overcome. You should take advantage of their experience to avoid making the same mistakes.
If a legislative process is rejected many of these same steps would need to be taken, but with a redefined focus. For example, it would still be worthwhile to explore the reactions of various parties to the proposed organization. If it is to be most effective, it should be formulated in a way to give it maximum credibility from groups such as State and Federal agencies, environmentalists, local government planners, and the Administration’s growth management initiatives.

6.0 Checklist for Future Action

In summary, the next steps to foster water supply reliability planning in California should include:

1. Set up a reliability committee within CUWA along the lines of the Power Pool model. Encourage the establishment of these subgroups in other agencies, such as the State Water Contractors, California Municipal Utilities Association and the Association of California Water Agencies.

2. Reach a consensus on the desirability of a legislative option.

3. Review and monitor ongoing legislative efforts
   - The Hatfield Bill
   - The Cortese, Eastin and Farr Bills in the State Legislature.

   Draft a mark-up of these Bills if appropriate. Will a legislative solution be imposed on the water industry? How can this be shaped to best suit the needs of California water agencies?

4. Explore the dimensions of the preferred reliability planning agency:
• What do people within the industry want? What are they prepared to accept and work for?

• If legislative action is the preferred path, discuss possibilities with other players, such as legislators, SWRCB, DWR, environmentalists:
  - informally, to gauge the level of support and interest; and,
  - more formally, at a workshop or retreat.

• If a legislative approach is not the preferred path, prepare a strategy to react to the proposed bills.

5. Review and evaluate possible institutional locations for a water supply reliability planning agency:

• Within DWR, for example, as part of an expanded Bulletin 160 process?
• Within SWRCB, for example, as part of a more regular reliability assessment?
• Within other existing organizations?
• Within a newly-organized agency?

6. Investigate the preferred levels of, and instruments for, funding and enforcement powers for this agency:

• For developing and imposing service reliability criteria
• For environmental issues
• For mandating and monitoring the inclusion of reliability planning in the water resource planning process.
• For facilities issues
• For conservation and other demand-side issues
• For planning for droughts and other short-term emergencies.
7. Review the details of the processes of the California Collaborative Process and the technical advisory groups of the NWPPC. These groups appear to have developed effective consensus-building techniques.

8. Investigate how to deal with the diversity and number of water utilities to be folded into a reliability planning agency.

9. If a legislative solution is not preferred, design a stronger voluntary agency, along the lines of the reliability councils. Investigate the interaction this agency would have with other interest groups.
APPENDIX A: CALIFORNIA POWER POOL

A.1 Summary

The California Power Pool is a group of the large investor-owned electric utilities in California. The group was formed to ensure the reliable operation of the interconnected electric system. The utilities in the group are interdependent, share some common facilities, and are affected in common by many incidents which impair system operation.

The Power Pool agreement dates from 1964, and as such is one of the earlier agreements between utilities. Partly because of this, the utilities appear to have been very interested in protecting their right to independent action, and in reducing the likelihood that any utility would be forced into undertakings. As a result, the agreement is strong on consensus and short on enforcement. We included this organization in our study for precisely this reason; it is the least formal sort of organization for reliability that the water agencies might want to consider. It does not require any legal or regulatory mandate, and involves only the utilities in a private decision-making process for joint reliability concerns.

While the agreement does not include all utilities in California, it does include the main wholesalers of power. Smaller utilities were included in this agreement by virtue of their position as buyers of wholesale power from the larger utilities, but have no membership rights. This is another feature that the water agencies might want to consider. Whatever institutional form is chosen for reliability planning, the inclusion of the numerous small water agencies will add complications. The California Power Pool has solved this problem by restricting membership to wholesale utilities — including
SDG&E, which is mainly a retail utility but does occasionally make wholesale sales. These wholesale utilities take responsibility for their retail members. This means that the large majority of electricity supplied in California falls under the arrangement, but the number of active participants in decision making is kept to a minimum.

A.2 General Comments on Reliability Processes

Our Power Pool contacts believed that the three aspects which made the Power Pool work were:

- A strong commitment by all participants to the central goal of providing reliable electric service;
- The implicit threat that if the agreement did not work this reliability would be compromised, more expensive to achieve, or taken over by legislative or regulatory mandate; and,
- The requirement for unanimity.

This third point was surprising. However, the requirement for unanimity forced all issues to be explored fully, and resulted in compromise positions to which all participants could feel committed.

They believed that it was essential to have a process which ensured the views of all stakeholders were presented to decisionmakers. Speaking of their internal company process, they said that there was a creative tension between planners and operators over reliability standards. The planners believe that operators are too risk-averse, and wanted more insurance than was necessary. The operators believed that the planners were too theoretical in their approach, and did not allow fully for the operation of "Murphy's Law" in the real world. Whatever is the truth of these opposing positions,
each party was much more accepting of the final result if they believed that their position had been heard and understood.

A.3 Specific Suggestions for Water Planning

Any move towards coordinated planning in the water industry should be careful not to disrupt ongoing, perhaps informal efforts to coordinate needs. There was a perception that in this area the State agencies often are disruptive. The State Water Resources Control Board and its Division of Water Rights are seen as being more interested in protecting their own turf than in supporting meaningful progress. The Department of Fish and Game is seen as presenting ultimatums in a way which precludes negotiation. They also expressed concern over the requirement to meet possibly conflicting state and federal requirements.

PG&E operators also expressed concern over drawdown policies ("rule curves") being followed by California dam operators. Their impression was that State and Federal agencies were operating under the assumption that next year's precipitation pattern would return to normal. The electric utility rule of thumb is to keep sufficient water behind dams to be able to meet minimum conditions for fisheries and firm contracts under dry year conditions. Their fear was that by drawing down dams too much, both water reliability and electric reliability were likely to be compromised. Many people believe that the wisdom of this more conservative approach to carryover storage has been revealed by the current record-setting drought condition. Dam operators -- for example, WAPA -- currently were rethinking their minimum storage strategies. Because of the many conflicting demands on water use, drawdown curves were no longer totally valid guides for dam operation. PG&E staff believed that this might be an opportune time for dam operators to meet and discuss their individual reliability
criteria -- not necessarily to standardize these, but to share each other’s knowledge, experience and thinking in the area.

These power operators also expressed the need for forecasting demand. Their experience with water utilities was mixed. Some water utilities seemed to plan well -- Yuba was quoted as one that had a well-developed planning process. Other utilities were not able to work with PG&E to optimize the water delivery/power production process because they could not discuss their future water supply needs.

These electric utility staff did not think that the loose organizational form of the Power Pool would be useful for the water utilities. They believed that there are too many diverse users, who lack a common interest and goal. There needs to be some perception of disadvantages arising from unreasonable demands. The Power Pool organization relies on peer pressure. The utilities rely on each other a great deal, and if one of the members are seen as uncooperative, or more interested in its own agenda than the common good, then the other Pool members will be less inclined to include it in beneficial power contracts, for example. They could not see any counterpart to this in the broad diversity of interest groups which might be involved in water planning. They believed that the problems of overlapping jurisdictions and water rights were much more complicated.

While this pessimism on their part may be justified, we would argue that an organization such as this does have some role to play in increasing water reliability. This may be limited to a first step towards a broader, more comprehensive organization. Another, more long-term role might be as a clearinghouse for water transfers. It might also serve as an institutional framework for conjunctive use agreements between water districts.
Electric System Reliability: The Problem

Electric utilities have the unique problem of needing to match demand and supply instantaneously. Failure to do this can result in frequency disturbances and severe damage to both utility and customer equipment. To protect the utility's equipment, much of it is equipped with relays which "turn off" the equipment when the frequency varies from the standard 60 Hertz. Under a worst-case scenario failure to match supply and demand instantaneously can cause a whole system to shut down. This is what has caused or aggravated the worst power outages in the past. For example, in the New York blackout the New York utility failed to match supply with load, and frequency fluctuations caused the relays on transmission lines to open to protect nearby systems. Relays on generation plants also operated, isolating the plants from the system and shutting them down to prevent damage. This resulted in an outage that "cascaded" from area to area, and was much greater than any shortage in capacity.

Because of this unique problem, electric utility operation includes a concept called the "control area." Under this idea, a system controller in a particular utility is assigned the responsibility to match load within a given geographic area. Many times this control area may include utilities other than itself - - for example, included in Pacific Gas & Electric (PG&E)'s control area are the municipal utilities of Palo Alto, Santa Clara and SMUD.

There are four major control areas in California. In addition to PG&E, these were Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Los Angeles Department of Water and Power (LADWP). These utilities are all interconnected, and in some cases have joint
ownership of transmission facilities. Because of this, a frequency disturbance on one utility could affect its neighbor's reliability by causing cascading outages.

The California Power Pool

To increase each system's reliability, the three major investor-owned utilities signed the California Power Pool agreement in 1964. Because their control areas include many of the smaller utilities, these were de facto beneficiaries of the agreement. LADWP, by its own choice, is not a member, but has participated as an observer at all levels of the agreement.

Under this agreement, each utility committed itself to maintain a reliable area system, while reserving most final decisionmaking authority to itself:

"Each Party shall maintain and operate its system so as to minimize the likelihood and effect of disturbances or outages in its Area System which might impair service to the customers of any other party. Each Party shall be the sole judge of whether service to its own customers is being impaired and may require such other Party to take, and may itself take, appropriate corrective action."

In the body of the agreement, definitions of all terms used are specified, and formulas given, to avoid misunderstandings or disputes. In case of disagreements, an arbitration process is outlined. In addition, each utility is excused from the default of any obligation arising from the contract if such a default is caused by "uncontrollable forces". In the Contract, these uncontrollable forces specifically do not include extreme temperature, increases in demand or failure of precipitation. In fact, it appears that if a utility which was making a reasonable effort at reliability is caught short, it is more likely to be excused than one which was felt to be "cutting corners".
The agreement was submitted to the California Public Utilities Commission for approval, and did not become effective until this approval was granted. At that time there was probably some limited public input, but the complexities of transmission systems have always restricted public debate in this area. There is no structure for obtaining public input; whatever has occurred has been in regulatory hearings and in court cases. Various agencies, notably the Sacramento Municipal Utility District (SMUD) and several Southern California municipal utilities have accused the utilities of operating the transmission system as an instrument of monopoly power. These court cases have been as a result of the value of transmission service, and have not arisen as a result of the Power Pool itself.

The few times input from others has been explored, it has resulted generally in the interest group stating a position at the beginning of the discussion in a way that has been perceived as not open to negotiation, and has precluded further discussion. The few cases where it has proved successful have been with more informal arrangements. For example, PG&E makes some releases from dams to provide "white water" for boaters on selected rivers. This may impose some moderate cost on PG&E. They believe that the alternative of refusing all requests might provoke a political response which may prove more expensive in the long run. Similarly, twice a year they make presentations to a committee of concerned citizens regarding their planned dam operations at Lake Almanor. This appears to have been more of a public relations exercise than a true seeking of public input. However, the sharing of the citizen's and utility's concerns has resulted in less controversy.

I. Administrative Organization

The agreement authorized the formation of a committee called the Board of Control to administer the agreement. It also set up a standing Engineering and Operating (E&O) Committee to provide
technical advice to the Board of Control, and authorized the setting up of other standing or temporary committees as the need for them became apparent. The day-to-day operations of the agreement are performed by the E&O Committee, which presents recommendations to the Board for adoption. The Board insists on a unanimous recommendation from the Committee; in a few cases where the committee has been unable to agree, it has presented the Board with the alternatives and the arguments for and against each. The Board usually gives the Committee additional policy guidelines, and returns the problem to the Committee to reach a unanimous decision. This may entail a great deal of work and negotiation, but it is generally believed that the results have benefitted from this process.

A. Board of Control

The Board consists of one representative from each utility (with a designated alternate). The salaries and expenses of these members are met by the individual utilities by which they are employed. These are not full-time positions, but are an additional responsibilities of Vice Presidents with operations responsibilities. The Board's decisions are made by unanimous agreement, and Board decisions are recommendations only, for advisory purposes and not binding on the individual parties. The Board elects one of its members as chairman and another as vice-chairman. Any member may call a meeting of the Board, and each Party is obligated to have a representative in attendance for any meeting called on notice of five days or more.
B. Standing Committees

The Board establishes permanent and temporary committees to investigate and advise on specific problems. These committees are organized on the basis of equal representation of the parties. The committees may make decisions by majority vote, but a dissenting party has the right to appeal any such decision to the Board. The committee members are employees of the utilities they represent, and their salaries and expenses are paid by those utilities.

The major committee is the E&O Committee discussed earlier. This consists of the operating managers and an engineering representative. This committee meets every other month to share information about the companies’ current loads and resource position. During each summer, there also is a requirement to file daily loads and resources information with the Public Utilities Commission. This requirement is outside of the Pool agreement.

The Pool also has set up a standing technical studies task force, which coordinates and supervises any joint studies which may be required by the Board of Control or the E&O Committee.

II. Power Pool Responsibilities

Under the agreement, the Board of Control and its committees have the following responsibilities:

1. To review and coordinate planning.
2. To establish procedures for sharing of information among the parties.
3. To determine the capability of the transmission interconnections.
4. To establish metering and billing procedures necessary to implement the agreement.

5. To determine operating procedures and criteria for reliability standards.

6. To recommend any temporary or permanent staff and associated budget which may be needed to support the Board, and, if approved, to appoint such staff.

7. To recommend to the Parties any procedures necessary to administer the agreement, or to share the costs of this administration.

Three of the more important of these responsibilities are discussed below:

A. Review and Coordinate Planning

By March 15 and September 15 of each year, and by any other date that the Board may authorize, the members submit to the Board forecasts, by month, for the remainder of the current year and for the next four years. The utilities did have general discussions of forecasts out ten years, but the Energy Commission now preempts resource planning for year 5 and beyond.

Each utility uses its own methodologies and assumptions, but must present these and defend them before the other members. At this time, for example, there is some discussion about assumptions concerning the reliability of power purchased from small non-utility generators.

Any additions and reductions of resources planned to occur during this time period must be identified. The capability for hydro facilities are based on the current outlook for the remainder of the initial calendar year, and on 1931 California water conditions and adverse water conditions for Colorado River plants. These assumptions may be varied by the Board.
The Board of Control reviews these reliability plans and may make recommendations for changes. Once a plan is approved, each party has an obligation to carry out its plan, until the plan is superseded by another approved plan. If a utility carries out its approved plan, and still does not meet the criteria of the agreement, the Board's approval of the plan does not excuse the utility of any liability towards the other parties to the agreement which might be incurred by this failure. Examples of the liabilities which might be incurred are discussed later in this summary.

B. Determine Reliability Criteria

The initial agreement set a minimum standard for reserves required to be maintained by each operating area. The agreement further stated that the Board could vary these standards if justified by future operating experience. It was well understood that these initial standards were minimal, and "that as a matter of good operating practice it will ordinarily be necessary" to have a greater reserve than that specified in the agreement. However, this agreement did not obligate its parties to maintain those higher standards.

Any utility which did not maintain reserves at or above this minimum standard is said to have incurred a Capacity Resources Deficiency equal to the difference between the actual level of reserves and the required level. Such a utility "shall use due diligence to (remedy the situation) as soon as possible." In addition, the utility is required to pay liquidated damages to the other parties. The level of these damages depends on the level and duration of the deficiency. This payment is excused if the actual peak demand exceeds 110 percent of the peak demand forecast in the approved program, or if the deficiency was caused by an emergency or by circumstances which are judged unpredictable in the sole judgement of the Board of Control.
Similar standards were set for energy mandated to be available in excess of energy required for a given month. Standards were set also for Spinning Reserve requirements. For those interested, the problem of spinning reserve is discussed in the Appendix to this memo. Spinning Reserve Deficiencies are excused under the same circumstances as for Capacity Deficiencies; in addition, if a utility incurs a Spinning Reserve Deficiency solely because it is providing emergency capacity to one of the other utilities, it is also excused. The reliability criteria have been changed from time to time in the light of operating experience and changing conditions. The Engineering and Operating Committee (discussed below) recommends these changes for the Board’s adoption.

The payment levels for the damages were determined in the original agreement, and may be changed from time to time by the Board. The agreement also spells out formulas for allocating these damages between the remaining utilities. The other utilities will do their best to assist the utility with a deficiency, but are not required to jeopardize service to their own customers or to other utilities which are being supplied under firm contracts.

C. Determine Operating Procedures

The Board and its Engineering and Operating Committee have established a series of operating procedures which are used to ensure reliable operation. In addition to the Spinning Reserve Requirement described above, the Board introduced criteria for the operation of the Pacific Intertie, the major North-South transmission path.
ADDENDUM: TECHNICAL ISSUES

Spinning Reserve

Spinning Reserve is the amount of capacity which can be used immediately to meet variations in load or to substitute for a plant that has broken down. For example, if a 350 MW unit is producing only 100 MW, the other 250 MW usually can be brought on line immediately. If the unit is not operating at all, it may take some time to be fired up and for the boiler to be heated before it can generate electricity, and so contributes nothing to spinning reserve. Insufficient spinning reserve can cause cascading outages even when there is excess capacity available. The Spinning Reserve requirement is checked half-hourly; any utility which is below its requirement for two consecutive half-hour intervals is said to have a Spinning Reserve Deficiency, must remove it as soon as possible, and must pay liquidated damages to the other parties.

Operating Procedures for the Pacific Intertie

The Pacific Intertie is used to bring inexpensive hydro-power from the Northwest into California. There is often a great deal of power being shipped over these lines. Because of their size, failure of a line could have a major effect on the ability to meet demands instantaneously. Unfortunately, failure of these lines is not impossible; an off-course crop-duster can bring down both his plane and a line at the same time. To minimize impacts from such accidents, the Board decided that under normal circumstances the Intertie should be operated so that the loss of one line section, or a single plant outage on any interconnected system, should not cause frequency fluctuations.
In practice, this means that either sufficient spinning reserve must be carried in the utilities so that if a line is lost the power can be replaced immediately; or, the lines should always run at much less than physical capacity, so that in the event one line is disabled, power can be switched to the remaining lines. This reliability requirement has meant that the California utilities have saved much less money than if they had operated the Intertie based on the cost of electricity, and had ignored the reliability aspect. The Board recognized that in emergencies these standards might be violated, but that this should be recognized as part of the emergency, and ameliorated as soon as possible.

When an emergency occurs, the Board has set standards to protect the physical system and to minimize the impact of outages. They have set the following standards for frequency decay:

<table>
<thead>
<tr>
<th>60 Hz</th>
<th>Situation Normal</th>
</tr>
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<tbody>
<tr>
<td>59.1</td>
<td>Emergency Condition Declared -- 10 percent cutback of firm load.</td>
</tr>
<tr>
<td>58.9</td>
<td>20 percent cutback of firm load.</td>
</tr>
<tr>
<td>58.6</td>
<td>30 percent cutback of firm load.</td>
</tr>
<tr>
<td>58.4</td>
<td>Extreme emergency. Each utility may protect itself by disconnecting from its neighbors and do what it can to shed (cut back) further load.</td>
</tr>
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The load shedding is usually according to schedules planned in advance, with supplies to hospitals and similar public safety services protected. In fact, this is only the end of a series of actions which are part of the emergency procedure. As the spinning reserve approaches 7 percent and cannot easily be increased -- that is, the utilities have immediately available 7 percent more than is required -- they will stop supplying power on interruptible contracts. Once the spinning reserve gets below 7 percent, the system controllers must notify their neighbors, to ensure that the overall Pool spinning reserve remains at least at 7 percent. Once the margin gets to 5 percent, a utility usually will make public appeals for voluntary conservation.
The agreement further notes that in times of emergency it may be necessary for a system controller to act unilaterally, without taking the time to confer with controllers at the other utilities which will be affected. The conditions under which this was to happen were to be postulated in advance, and response plans prepared so that such immediate action would not jeopardize neighboring systems. The Pool also specifies the priority which should be accorded to wholesale contracts. Contracted firm capacity and energy supplies are given highest priority, because the purchaser is relying on that power to meet his own instantaneous demand. Economy energy service is given the lowest priority. This service is used to reduce costs; the purchaser has other sources of power which it chooses not to use because they are higher cost.
APPENDIX B: NATIONAL AND REGIONAL RELIABILITY COUNCILS

B.1 Overview and Pointers for the Water Utilities

This report begins with an overview of the continental and regional electric reliability councils, why they provide an interesting model for the California water agencies, and what pointers can be gained from the Councils’ experience.

B.1.1 Overview

The North American Electric Reliability Council (NERC) and its regional reliability councils are voluntary organizations of electric utilities coordinated to promote the reliability of the electric supply system. The organizations maintain databases related to reliability, provide a forum for coordinated planning, and promulgate standards for reliability and methods for assessing this reliability. Membership in these groups is voluntary, and the organizations cannot coerce members into complying with the recommended standards and methods. The existence and widespread acceptance of the Council’s technical ability has given strong persuasive force to its recommendations.

Many facets of these groups could usefully be copied by the water industry if it decides against a legislative or regulatory approach to coordinated planning. It is more formal, all-inclusive and public than the California Power Pool example. However, full membership is restricted to industry organizations, although government agencies to have affiliate or observer status. It also is of interest because, for similar-sized groups its operation is considerably less expensive and formal than either the CEC or the Northwest Power Planning Council.
B.1.2 Pointers for the Water Utilities

Senator Mark Hatfield (Oregon) recently introduced legislation to establish a Western Water Commission to conduct a review of Western water policy. His legislative staff have indicated that he proposes to broaden this to a national body while the Bill is being reviewed. If Senator Hatfield is successful in his efforts to set up a water planning agency (or if an industry body is organized to lessen the need for legislative action), the relationship between NERC and the regional reliability councils might be a very useful model. Even more than in the case of electricity, the regional problems for the water industry are very different from region to region. Decentralization of planning along regional lines is likely to be preferable.

The reliability council’s role of providing guidelines for planning, serving as a central repository for data and information, and providing a forum for coordination and training could provide useful benefits to the water industry. The Council’s history of providing public assessments of the expected reliability situation, and its more recent attempt to keep the public informed on the ongoing EMF investigations also could provide a useful model for the water industry to use to encourage informed public debate over important water issues. The lack of formal forecast review, while a disadvantage from the aspect of an ideal planning situation, has the advantage that the ultimate responsibility for a utility’s planning rests with its own management and staff. The water industry may prefer this over the creation of a more powerful planning agency which would inevitably lead to some loss of independence by the individual utilities.

A further advantage of this form of organization is the united position which the industry presents on issues of importance to the industry. NERC does not have a lobbying arm; other bodies exist in
the electric utility industry which perform this function. However, it provides a source of data and expertise which can be called on by the industry, and the unity of purpose provided by this organization is very powerful.

An organization such as this poses an extra burden for utility staff, particularly those from the larger and more sophisticated utilities. NERC has a full-time staff of approximately 20, and the regional councils have similar level of staffing. The majority of the technical effort is undertaken by utility employees. In addition to their normal duties, they become involved in committee meetings, technical workshops and training sessions which may assist the larger utilities, but in general will provide more significant benefits for the smaller utilities.

A major drawback of this type of organization is that it consists solely of industry personnel. This limits it to playing an advocacy role in situations where a balance must be struck, say between utility and environmental interests. Environmentalists are unlikely to accept decisions of a body in which they have no input. In addition, there is no procedure for public input into the process, so that while such a body can serve to alert the public of growing reliability problems, it is limited to solutions which can be implemented by the water industry alone. The lack of any provisions for enforcement of decisions, or even any requirement to reach a decision may lead to the postponement of issues on which consensus is difficult to reach.

Summary: A major benefit of this form of organization comes from its widely-recognized technical capability, which arises from its ability to tap expertise from throughout the industry. The benefits of this expertise also are shared throughout the industry. Its training and review responsibilities raise the standard of the poorer-performing utilities. It also provides a forum for sharing data and analysis.
It has no strong enforcement powers, which may be viewed as an advantage or a disadvantage. Its other major disadvantages include its weak decision-making power on policy issues, and its exclusion of non-industry stakeholders.

B.2 Background

National concerns over the electric system’s reliability were raised by a massive blackout in the Northeast in 1965. Federal legislators discussed the need for a national regulatory process to protect system reliability. To circumvent these intentions, the utility industry proposed a self-regulating body, which became the North American Reliability Council (NERC). The benefits of including Canadian utilities into this organization was a further argument against federal regulation.

B.2.1 The Parent Organization

NERC is a non-profit corporation owned by the nine regional reliability councils. It is directed by a Board of Trustees composed of electric utility officials elected by the regional members, and the Board’s officers, who are also electric utility executives. The meetings of the Board are attended by observers from U.S. and Canadian federal government agencies, national representatives of state regulators, and various electric utility industry associations.

The Committee Structure

NERC has several standing committees. The Engineering Committee produces and releases to the public an annual assessment of the reliability situation for each reliability region for the current year.
and the next nine years. This assessment compares forecasted future loads with expected resources to highlight any growing disparity. It also discusses trends and issues which could impact negatively on future reliability. For example, there was some concern that Clean Air Act requirements to add flue gas desulfurization systems to coal-fired plants would reduce the plants’ reliability. A task force under the engineering committee used the generating availability database to evaluate this concern. It found that the requirement would have a significant impact on costs, but not on reliability. The Committee also maintains for its members’ use a library of specialist analytical software used to assess reliability, and develops and assesses new methodologies and information. The Committee has a Reliability Criteria subcommittee which investigates and publicizes recommended standards for systems and system components.

The Operating Committee circulates and updates an operating guide, which is used to promote reliable operation of electric systems. This Committee controls a Monitoring Working Group, which, on an individual utility’s request, and at no charge, will review a utility’s operating practices for their impacts on reliability, and produce a confidential report recommending improvements. The Committee also has several subcommittees, dealing with such issues as operating guidelines for emergency operations, and control area performance. The performance subcommittee works with individual utilities who are identified as having poor control performance to encourage improved procedures.

Data Bases

NERC maintains a series of extensive data bases which are unique for their total coverage and depth of information. One example is the generating availability data system (GADS). This data base
charts the history of a large proportion of existing generating plant by size, type of fuel, and age, to name the most obvious. Every outage, partial outage or maintenance associated with that unit is recorded. This database enables an individual utility to compare the performance of its plants with others which are similar in some way, and allows groups to identify trends, such as the most common form of failure for a given unit type. The data is available to the general public only in aggregated form, and permission must be given by an individual company before data specific to its plants may be obtained.

NERC also provides technical support services including training and performance evaluation. It also provides (for a fee) analytical support to individual projects where its expertise is unique.

B.2.2 The Regional Organizations

Many reliability interests are unique to geographic regions of the country. For example, a major interest of western utilities is the effect on reliability of the area's reliance on inexpensive energy from the Pacific Northwest. This makes the systems particularly vulnerable to outages related to the major north-south transmission lines. In recognition of these regional differences, and probably for administrative ease, NERC members are divided into regional reliability councils.

The Local Regional Council

The Western Systems Coordinating Council (WSCC) covers a region stretching from the Pacific to the Rockies, and includes two provinces of Canada and northern Baja California in Mexico. Its 61 members range from large utilities such as Pacific Gas & Electric to small public utility districts in
Oregon. It also includes federal and state agencies such as USBR and the California Department of Water Resources, and power wholesalers such as the Western Area Power Administration.

WSCC sets specific reliability standards for its region, and compiles an annual summary of demand forecasts and resources for the current and the next nine years. The compilation it produces is forwarded to NERC to be incorporated in the national assessment. The WSCC is unique among the reliability councils; its membership is so diverse that more than one reliability standard has been recommended. In its report to the Council, each utility must state which reliability criterion it has chosen as applicable to its circumstances, and why it believes this is a valid choice. For example, small utilities which are exceptionally dependent on a single source of power must have higher reserve margins as a percent of load than a larger utility with more diverse energy sources.

The regions also identify local or region-wide trends which may impact negatively on reliability in the future. In the May, 1990 issue of its report, the Council identified, among other issues: the region's growing dependence on natural gas as a primary generating fuel; inadequate transmission capacity in one region of Washington State; and growing concern over possible health effects of electromagnetic fields (EMF).

The Committee Structure

The Council has four standing committees: the Planning Coordination Committee; the Operations Committee; the Environmental Committee; and the Public Information Committee.
The Planning Coordination Committee, in addition to compiling the annual reliability reports, maintains a model which incorporates the expected loads and generation on each part of the system. This model is used to simulate the effects on reliability of possible problems on the system. The Committee also reviews component performance in relation to design criteria, and reevaluates reliability criteria and procedures on the basis of Operations Committee reports.

The Operations Committee reviews any incidents which place the system reliability at risk. For example, if a transmission line goes down, after the incident the Operations Committee reviews the power flow records and operator actions taken to learn what succeeded and what failed in this situation. The Committee also draws up guidelines for contingency planning, and acts as a coordinating agency during emergencies. It maintains the current outage status of large units and coordinates the maintenance schedules on these units. This avoids the possibility that a significant number of large units might be shut down simultaneously. It also keeps a listing of available spare transformers, and provides training for system dispatchers. This training not only improves the technical ability of the individual dispatchers, but develops standards in procedures and methods which increase the reliability of system operations.

The Environmental and Public Information Committees are more recent additions to the Council. The Environmental Committee acts as a resource for environmental information and related technological developments. The Committee has a Facilities Siting and Land Use Task Force which works with federal land management agencies on siting problems. It also has an EMF Task Force which has worked with the Public Information Committee to monitor the ongoing investigations in this area to ensure that utilities are sufficiently knowledgeable to respond to public questioning on
the issue. The public Information Committee also maintains relationships with news media and publishes information for public distribution.

B.3 Successes and Failures of the Councils

The reliability councils can claim to have made a significant contribution to electric system reliability. However, there have also been a few notable failures which have arisen from the structure of the organization. These structural reasons for these successes and failures are discussed below.

B.3.1 Technical Excellence

The reliability councils always have been able to call on the most knowledgeable and experienced utility staff from across the country. Their technological expertise generally is unparalleled, and so their recommendations have been accepted widely. Although there is no provision for enforcement of the Council’s standards, the member utilities use them as a basis for all of their planning. Any utility which has conformed to these standards does not have to explain or defend its judgement in any forum. Any utility which fails to do so must bear the burden of proof that its actions were prudent.

B.3.2 Inadequate Review Process

The organization falls short in that there is only cursory review of the assumptions made in each utility’s plan. If one utility is planning to meet its reliability responsibility by purchasing power, the Council makes sure that the selling utility has correspondingly planned to sell the power. There is
an overall check to ensure that all of the region's utilities do not plan to be net buyers at the same
time, and that expectations for power plant performance are within reasonable ranges. However, the
individual demand forecasts are accepted without review for reasonability, and no examination is
made of plans for or assumptions concerning demand-side management.

B.3.3 Difficulty in Reaching Consensus on Policy

The requirement for consensus among such a broad diverse group has also slowed important
processes. One large utility complains of a "U.N. syndrome", where small members have a
disproportionate impact on decision making, and can delay or divert issues which are of great
importance to the larger utilities. Southern California Edison has been negatively impacted by
transmission problems in the Utah/Colorado/Arizona area for at least a decade, and at a high cost.
The resolution of this problem involved investments by utilities other than Edison to upgrade their
lines, which they resisted because Edison would be the primary beneficiary. This problem is
beginning to be solved by the Council; but the time taken to reach this resolution is not a
commendation of the efficiency of the organizational structure.
C.1 Overview and Pointers for the Water Utilities

This report begins with an overview of the Northwest Power Planning Council, why it provides an interesting model for the California water agencies, and what pointers can be gained from the Council's experience.

C.1.1 Overview

The Northwest Power Planning Council was established by federal law in 1980. Although this is a distinct difference from any likely plan for a California water planning agency, there are so many other similarities that it will repay our close attention. The Northwest electric system is dependent largely on the numerous federal dams on the Columbia River System. They are concerned with similar problems of preparing for drought years and balancing of the many beneficial uses of water - hydro-electric generation and fish protection to name the most important. They also have a very well-developed electric planning process which is integrated with the fish protection program. This has involved federal and state agencies, environmental groups and a large number (over 100) of large and small utilities.

Of particular interest is the extent to which the Council has involved the public in its decision making process. Its initial charge was: to plan for reliable electric service at minimum cost; to develop a wildlife protection plan to mitigate damage done to the environment by the extensive network of dams; and to increase public involvement in the planning process. Because of this specific instruction

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to make public involvement a priority, the Council has spent a great deal of effort and money on ensuring broad representation in the planning process. This effort has made the process more cumbersome and expensive than might be necessary. However, whenever attempts have been made to streamline the process, there have been complaints from groups who feel their interests are being short-changed. It may be that with such controversial decisions to be made, additional time is necessary to ensure that all participants "buy into" the proposed solution.

In fulfilling its other mandates, the Council has had to balance competing needs in very controversial areas. This balancing of beneficial uses which so parallels the California water agency requirements is a major reason to examine the organization. The Council is also smaller and based more on consensus than the more-regulatory California Energy Commission (CEC). It also has a more restricted role than the CEC. In particular, it has fewer explicit enforcement powers, although its lobbying and persuasive powers have been strong. The only body over which the Council has explicit powers is the Bonneville Power Administration (BPA), which is can depart from the Council's plan only with an enabling Act of Congress.

C.2 Pointers for the Water Utilities

The public process appears to have been very important, both in uniting the region behind the Council's decisions and in providing the power of persuasion to execute the Council's plans. The Water Industry is going to face many very controversial decisions, and it will be important to build a broad consensus behind those decisions before the decisions are taken. The technical advisory committees utilized the input from many diverse experts, each of whom had a strong input to the final result. The public information, public response and open meetings ensure that all those who are
interested in a subject have ample opportunity to be heard. The high technical standard of, and the strong political power behind the Council's decisions ensured respect and cooperation.

The ability of the Council to speak with one voice for the interests of the region when lobbying in Washington has led to growing cooperation from federal agencies. The Council has had a mixed response in this area. BPA was initially mistrustful and concerned about loss of "turf". The two groups now work together in a collegial and supportive manner. The USBR has, from the start been supportive and cooperative. Council staffers suggest this has arisen from two causes: first, the personality of the regional director was positive and helpful; and second, the Bureau seemed to be looking for a new mission -- given that building dams is no longer a full-time occupation, they welcomed the call from the Council to play a leading role in restoring the health of the rivers. The Corps of Engineers, on the other hand, has been reluctant to become committed to the task in hand. Currently, although all parties have committed to a pattern of dam operation designed to protect the fish migration, the Corps will only agree to play its part on a year-to-year basis. California as a state is important enough on a national scale that a well-connected group speaking with one voice on an issue of importance to the State will likely gain a lot of federal attention.

While the question of funding never appears explicitly as an issue in Council discussions, it appears obvious that the amount of money which has been spent on wildlife mitigation has been one factor that has assisted the region to reach compromise positions. Some of this funding has been through the imposition of a surcharge on electric power sold by BPA. Other funding has been available under federal agency funding programs. Given the federal budget situation, and the fact that any California body is likely to be State-based, rather than federal, it is unlikely that much if any federal funding can be expected.
The role of politics cannot be overstated. Historically, the Councillors have had strong ties to both state governors and federal congressmen before being appointed. This has been valuable, both as a source of political power for the Councillors, and so that the Councillors were aware of political realities and limitations. The appointment of these individuals with political connections is seen by the Council staff as much more important than professional training in skills such as engineering or economics. Staff and outside experts can supply the skills and training needed in these areas. It is more important for the Councillors to have full-time positions so they can learn what is needed from these experts.

When the Council was first formed, there was some concern that it had been given responsibility without authority. However, in the words of the first Chairman, authority doesn’t matter as much as power, and power will come from the credibility and standard of the work done. In retrospect, giving the Council greater power may have made some problems simpler. However, the realities are that when you are working with large bureaucracies, it is more important to have them supporting your decisions than to have them ordered to obey.

The Council staff suggested that there could be benefits in expanding or reshaping existing agencies, rather than forming a new agency from scratch. The first years of the Council were very hectic and disorganized, with a great deal of time spent forming contacts and defining relationships. They suggested a three-person council, appointed by the Governor, to be people with policy and political skills, rather than technical specialists. They believed it was advisable to have a professional staff -- such as hydrologists or biologists. The advisory committees have been very important; if you decided to go this route they suggest investigating this facet more closely. The Council made many early
mistakes which they could help us to avoid. They also urge that sufficient attention be focussed on informing the public, through staff graphic artists and writers to produce presentations and publications, or to write articles for general publication.

C.3 Background

BPA was formed as a marketing agency for electricity produced by federal dams in the Pacific Northwest. This power was sold to numerous small municipal agencies, as well as some of the larger utilities (some investor-owned) in the region. In the 1970's the demand for electricity in the region was forecast as growing greater than the dams were able to supply. This raised questions concerning the role of Bonneville in supplying additional power to the region, and how the smaller utilities, in particular, were going to unite in the construction of any needed power plants. State and local agencies wanted increased input into planning decisions which they believed would be made by a federal agency that was not necessarily sensitive to local interests. In addition, the impacts the dams had caused on many salmon spawning areas were recognized, and this created impetus for a mitigation program to protect salmon runs from extinction.

The result of these concerns was the creation, by federal law, of the Northwest Power Planning Council. This consists of eight councillors, two from each State in the region, who were appointed by the Governor of that State. In addition, a small staff was hired. This consists of technical and policy analysts, and editorial and graphics staffs to allow for public information. In addition, staff have been assigned to increase public participation, and to support the Counsellors. The total staffing (excluding Counsellors) is approximately 70 people.
C.4 The Process

The Council worked initially with a team of outside experts who made public presentations on various aspects of the problem. This was particularly important in the early days of the Council, when many participants were familiar with the facts and problems of their issues, but were not aware of the perspectives of others. Initial training in negotiating skills were provided also. This initial education process was very important, because it gave a basic level of shared information with which to work.

The Council still relies on a broad group of outside experts who work on the voluntary technical advisory committees. One of these committees are formed to provide a wide range of technical and policy input into each issue facing the Council. When the issue is decided, the technical advisory committee disbands. The general process by which the Council works is as follows:

1. The Staff prepare an issue paper, which discusses the problem, and various possible solutions or actions to minimize the problem. This paper is prepared with the assistance of the technical advisory committees, made up of experts including employees from utilities, state and federal agencies, and environmental and other public interest groups.

2. The issue paper is published and circulated. It is further discussed in Council publications, and a public meeting is held where the issue is presented. Public comment is invited either in written form, or at a later meeting.

3. One month later, a further open meeting is held to obtain public comment. The Council publishes all public comment, and responses to these comments.

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4. A further month later, the Counsellors vote to accept, reject or modify the plan proposed by the Staff.

For major decisions such as the Fish and Wildlife Plan or the Power Plan several issue papers are involved, each of which goes through the process described above. Then a Draft Plan is circulated for public comment, and a meeting for public comment is held before the decision is made. It has been the practice of the Council to try to avoid voting until either a consensus has been reached, or has been shown not to be achievable. In a surprisingly high proportion of issues, consensus has been achieved.

The Council does not attempt to work closely with the many utilities within its region. The demand and supply forecasts are produced by Council staff independently of the individual utility forecast. Interested utilities have staff members on the technical advisory committees, or keep informed through the public information process. In many cases, the smaller utilities are involved merely through their associations -- such as the public power association, or the rural cooperatives association.

C.5 Why the Process Is Succeeding

It is too early to declare the process a complete success. Salmon and steelhead populations in the Columbia River Basin still are declining, and several runs are threatened with extinction. However, the process has succeeded in several ways:
• It has increased greatly the attention and funding for conservation programs. The Northwest has become a leader in energy conservation. With the low prices for energy which are the result of extensive hydro facilities, very little attention had been paid to conservation. The Council promoted the idea of conservation as an alternate resource, and has led the way in urging local government to institute building efficiency standards and encouraging the utilities to implement programs.

• The public process has resulted in a broadened consensus over both power and wildlife issues. Major concerns today are expressed over speed of implementation, rather than general questions of direction or goals. The process has united disparate groups to work towards agreed-on goals.

• All interest groups believe that their input can influence the final outcome. In the past, Indian tribes or agencies concerned with fish protection had to petition the Army Corps of Engineers to increase water flows during fish migration times. The Corps might agree, or might ignore these requests without giving any response or explanation. Under the Council's rules, the fish groups have been given a "water budget". This allows them to schedule some water releases in ways which they believe will most benefit the fish population. This is an example of a situation where individuals and groups have come to believe that they are contributing to solutions, rather than being ignored.

There appear to be four major reasons for the success of the Council. These are discussed below:
C.5.1 The Technical Advisory Committees

These guide the commission staff in the writing of the position papers, and so much of the consensus building takes place in this arena. The committees consist of individuals with special knowledge or interests in the areas under discussion. They include representatives from utilities, federal agencies (such as USBR and the Corps of Engineers, environmental groups, state agencies and special interest groups such as the Indian Tribes.)

The role of these groups is to agree on the definition of the problem, and to describe the likely solutions, including their positive and negative aspects. The history of the Council appears to be that the majority or major part of decisions are agreed-on at this stage. Only the more controversial are debated in the public arena. In addition, the high quality of the reports produced under the guidance of these committees was instrumental in gaining credibility for the Council's decisions.

C.5.2 Strong Political Connections

A second major reason for success is the appointment of the Councillors by the Governors of each state. At the time the Council was formed, there was discussion over whether the Councillors should be elected, or whether the more populous states should have proportionately larger representation. It is believed widely that the current situation has worked well: first, it has encouraged a regional approach, rather than an excessive concern over representation of subsections of the region; second, the Councillors are part of each state's administration. If a dispute arises, for example, between the Council and a Department of Fish and Game, the Governor can call both councillors and department heads into his office to resolve the issue. This approach has been used on several occasions.
C.5.3 Public Involvement and Information

A third reason for the success of the Council has been the strong effort to provide public information and public involvement in the process. By the time major decisions are made, their background has been explored fully in the local press, and all sectors of the community pressed to provide input. When a decision has been made, it usually has strong public support. This, combined with effective lobbying of the region's representatives has led to strong and activist support for the program in Federal and State Governments. For example, in the early years of the Fish Management Plan, the Corps had not budgeted to perform its part of the program as decided by the Council. The regional delegation in Congress was able to get specific funding for the program added to the Corp's budget. The federal agencies are well aware of the Council's influence, and over time have become much more responsive to the Council's views.

C.5.4 Strong Environmental Implementation

The fourth reason seems to be an appreciation by the environmentalists that although they may not be achieving all of their goals, they are getting a lot more attention focused and money spent on their concerns than they would under any other likely system. The political clout of the Council has been very useful to them in encouraging greater responsiveness on the part of federal agencies. The NRDC seems to be strongly supportive of the Council. The Sierra Club representative has complained that goals are not achieved fast enough, and that the Council should do more to fund the environmental groups -- at present it pays expenses for public interest groups to participate in Committee meetings, but does not pay for the expert's hours -- except in a few cases, where a
committee’s work became very time-consuming for its participants. Despite these complaints, the Sierra Club is fully involved in the process.

C.6 Problems with the Process

There are two major problems with the process. One of these derives from the structure of the process; the other may partly be structural, but also may arise because the task it has undertaken is so difficult. These two problems are discussed below:

C.6.1 Lack of Resource Enforcement Power

One of the initial motivations for the Council’s formation was negative -- the Council was formed in part to prevent the construction of additional nuclear power plants in the region. In this task it was successful, although other outside influences would have achieved a similar result over a slightly longer time-frame. However, because of this original goal, the Commission has more power to prevent than to encourage a course of action. For example, in the areas of conservation, the Council evaluates programs and decides which will be beneficial for the region. BPA then offers to fund these programs if they are undertaken by the individual utilities. However, there is no obligation for the utilities to comply. In practice the utilities have generally adopted most of the suggested residential programs, but the smaller utilities have been less enthusiastic about programs aimed at conservation for the commercial and industrial programs.
C.6.2 Failure in Fish Protection

The Council cannot claim success for its fish protection program. Despite its efforts, fish populations are continuing to dwindle. A large part of this is due to the lack of fish ladders on dams, which the Council is attempting to overcome. However, it believes that in part it is fighting this battle with insufficient authority. It has no mandate to examine riparian logging practices or agricultural river water diversions and runoff. The Council staff recommended that any California water agency which attempts to deal with fish protection should try to gain some authority in these areas.
APPENDIX D: CALIFORNIA ENERGY COMMISSION

D.1 Overview and Recommendations

This report begins with an overview of why the California Energy Commission (CEC) provides an interesting model for the California water agencies, and specific political and organizational suggestions offered to the water agencies by individuals within the CEC.

D.1.1 Overview

As a major part of its responsibility, the CEC has must plan for the State’s energy reliability. It has developed this particularly strongly in the area of electric utility planning, as was discussed in an earlier Spectrum report\(^1\). Many of the policy and institutional questions with which the CEC must deal are similar to those which would be faced by a water planning agency. These include trade-offs between price and reliability, the impact of conservation on reliability and the encouragement of conservation, and the minimizing of environmental impacts.

The legislation which set up the CEC has been suggested as a model to solve California’s water supply problems. A probable reason for this suggestion is the similarity of the current situation in water to the problems which led to the establishment of the Commission in the seventies. However, energy is not an exact parallel with water, so we have explored the important ways the water utilities’ problems differ from those early energy problems, and also the extent to which the Commission was

\(^1\)Reliability Planning for Water and Other Public Utilities”, Report to Metropolitan Water District of Southern California, Spectrum Economics, Inc., 1991
successful in solving problems for energy. In addition, Chairman Imbrecht and senior CEC staff provided useful political insights into possible structures for a water planning agency, and steps you might take to achieve this goal.

D.1.2 Recommendations

Senior staff at the CEC urged the water industry to take full advantage of the window of opportunity; at the moment, widespread concern is focused on the question of water reliability, which increases the prospects of success. This situation may not exist for very long, and already is weakened and overshadowed by the budget crisis. The South Coast Area Governments (SCAG) is producing a regional plan which will have air quality and water policy elements. CEC is working with them to produce an energy element. This is a warning to the water industry -- area governments will take responsibility for water planning if the water industry does not. Other bodies which might fill an organizational vacuum include EPA.

At this stage, they recommend the best approach is to work through the Administration, although both arms of government need to be brought on board. Chairman Imbrecht suggested that the water utilities should consider sponsoring a retreat, to which they invite key legislators and administration representatives. Other stakeholders should also be present -- such as environmentalists and agricultural interests, and the organization should be somewhat independent, or at least not explicitly driven by the water industry. Mr. Imbrecht recommended the California Foundation for Energy and the Environment, which organizes similar groups two or three times a year. These typically are in a pleasant location (such as the Napa Valley or the Central Coast) and consist of 30-50 people. The retreats last for one and a half days, and sessions consist of a twenty-minute opening presentation to
et the group's focus on a problem, followed by a round-table review of the problem under discussion. It is important that this group be one that can move the discussion along, and not consist of people who will posture, rather than contribute. The NRDC was mentioned as a responsible and knowledgeable environmental group which should be represented.

The staff suggested that another early move might be a Blue Ribbon Commission to present a report on the problems facing California's water suppliers, and general guidelines to possible solutions. This Commission should be required to present a report to the Governor or the Legislature. There is a downside to bringing the Legislature into technical areas, but it may give legitimacy to any "principles" which the Commission might develop. These principles could provide guidelines to industry, but will not be effective without some enforcement mechanism. The budget problems will limit options in this respect. The money shortage will make it much easier to have an existing body revamped than to start an entirely new Commission.

The water industry should be particularly careful not to oversell any proposed body. The present situation may be the most conducive we can expect to undertake a massive overhaul of the water industry. If you decide to make only an incremental fix at this time, you should be careful to avoid claiming to have achieved a universal solution. This would make any future progress more difficult, and also undermine the new procedure as groups became disappointed with its inability to deliver all that they believed was promised.

It could be wise politically to make federal agency representatives ex-officio members of any organization, so that they "buy into" the process. Staff suggest that merely keeping other agencies
current and informed can do a great deal towards ensuring the support among these groups which will be vital to your success.

D.2 The Problems In Energy

As discussed in the earlier Spectrum report, the 1960's and 1970's witnessed growing concern over the reliability of energy supplies. There was growing concern over power plant siting, particularly for the large nuclear and coal units which utilities were planning at that time. Just as in the water industry today, the two opposing requirements for environmental protection and reliable power supply were at stake, with no advances being made in either area. In response to these problems, the California State Assembly Committee on Planning and Land Use commissioned the Rand Corporation to conduct a study into the State's energy crisis. The resulting report identified two major problem areas: the need to simplify the power plant siting process while increasing public involvement; and the need for a plan to encourage and implement energy conservation. In response to this report, the legislature passed a Bill establishing the Commission, which was vetoed by Governor Reagan. When the OPEC oil embargo began, the Bill was reintroduced and in 1974 the Warren-Alquist Act became law.

In the first chapter of that Act, the Legislature found that electrical energy is essential to the people of the State, and that it is the responsibility of state government to ensure that a reliable electricity supply is maintained. The legislature further found that, in addition to other objectives, principle goals of planning at electric and gas utilities should be:

- To minimize the cost to society of reliable energy services;
To safeguard the environment, because it was felt that meeting the rapidly-growing demand for electricity was leading to irreversible environmental degradation; and,

To encourage diversity of resources through the encouragement of energy conservation and efficiency, and the development of renewable resources.

There was a perceived need for a central repository for energy-related information, and for a comprehensive plan for energy reliability. In addition, having a single state agency with the responsibility to site power plants was seen as necessary to allow all concerned parties to have input to the process while shortening the time required to obtain the necessary permits.

D.3 Administrative Organization

The Commission was set up as part of the Resources Agency, although as the CEC prides itself on its independence it is not clear how this works. The Secretary for Resources represents the Commission at Cabinet level, and has the relevant budget authority. However, other than the Commission keeping the Agency informed, there appear to be few ties. The Commission's reports go directly to the Governor or the legislature, without Agency review.

The Commission consists of five commissioners appointed by the Governor, with the advice and consent of the Senate. This makes the Commission more independent than many other agencies, which has the advantage of increasing the credibility of the Commission's actions and allows it to project the image of a disinterested, technically-competent group. Because of the perceived need for specialist qualifications, the skills and training of the Commissioners were specified as follows:
• an engineer or physical scientist, with knowledge of energy supply or conversion systems;
• a lawyer, member of the State Bar, with experience in administrative law;
• a professional experiences in environmental protection or the study of ecosystems;
• an economist with natural resource experience; and,
• a member of the public at large.

These Commissioners were to serve for five years, with one retiring each year. The Secretary of the Resources Agency and the President of the Public Utilities Commission were also ex-officio members, but with no voting rights.

The CEC was authorized to hire the necessary staff and consultants to carry out any studies which might be required to carry out its mandate. As a result it has a significant annual budget which is used fund research. It also acts as a conduit for Department of Energy research funds.

The CEC also was given the authority to hold any necessary hearings and investigations. As part of its process the Commission has used a wide range of types of interactions, ranging from one-on-one meetings with utility staff and public workshops focussing on particular technical issues, through full-scale hearings before the Commissioners. The enabling legislation specified that the Commissioners must conduct all hearings, and there was no provision for administrative law judges. In addition, the decision was made to separate the legal staff from general staffing, with the legal group reporting directly to the Commissioners. A possible result of these actions has been to make the hearing process less legalistic, involving commissioner questioning of witnesses and wider debate rather than the formal cross-examination of the CPUC hearing process.
The CEC also is tasked with reporting to the Legislature on a regular basis concerning the future energy needs of California. This provides a legitimacy to its process and investigations. It also has required a considerable level of effort that, while it has been productive at various times, at others probably has outweighed the resulting benefits.

D.4  Experience Gained by the Commission

Several facets of the CEC's experience are of particular note for water utilities. The most important of these are outlined below:

D.4.1 Unified Authority and Expedited Permitting

The Commission has a statutory requirement to give approval or disapproval on siting applications in three years after filing. Because it was set up as the "one-stop" for permits, it absorbed the relevant responsibilities from other state agencies. Where agencies maintained independent power (such as the Air Quality Districts) these were designed to dovetail with the CEC process. For example, the CEC siting process has been ruled as equivalent to the CEQA process, so that a power plant applicant does not have to undergo two distinct environmental reviews. This means that there is little division of authority, with different agencies working at cross-purposes. This lack of divided authority has proved very useful.
D.4.2 Divided Authority

The major exception to the lack of division in authority is the CEC's relationship with the California Public Utilities Commission (CPUC). The CPUC maintains responsibilities for setting rates and short-term (less than five years) operating conditions. The CEC's founding Act required it to investigate rate structures to determine whether the rate designs approved by the CPUC were economically efficient. However, they had no power to change this situation other than through the filing of testimony at the CPUC and through reports to the legislature. Similarly, the CEC may discuss standards for conservation programs, but the CPUC is required to approve ongoing programs. This division of power has been described as the CEC being required to set policy, but the CPUC being charged with implementation. This is further complicated because CPUC has no requirement to consider the CEC's position, and may ignore it.

This division of responsibility is believed by some to be a serious problem, because sometimes it has led the CEC to ignore pricing; a staff member stated that all of the poor decisions made by the CEC can be directly linked to a failure to consider pricing impacts. Because of this experience, the CEC staff evinced a strong belief that attention to pricing reform must be an integral part of any long-term planning for the water industry.

This divided authority can diminish both agency's ability to achieve results. In recent FERC hearings into new interstate gas pipelines for California, some doubt was cast on the CPUC's claim to speak for the State because of the blurred lines of responsibility. In addition, some believe that this divided authority has led to "forum shopping", with stakeholders playing one agency off against the other, and inefficiency through duplication of regulation or the two agencies working at cross-purposes. Others
believe that "competition in regulation" has kept both agencies much more on their toes. Certainly the formation of the CEC led to a rejuvenation of the CPUC.

D.4.3 Relationships with Federal Authorities

Because of their specific interest in thermal generation, the CEC has had little overlap with federal agencies. Where there is overlap, The CEC has used many strategies:

- A multi-year task force investigation into the federal Nuclear Waste Disposal program. According to CEC staffers, this exposed federal program as a sham, and led to the development of a more serious commitment by the federal agency.

- Law suits against Bonneville Power over transmission access. These have not been successful.

- Work with agencies on an ongoing basis. For example, the CEC has gained Department of Energy funding for some of its studies. The CEC believes that maintaining a high level of technical competence has given it greater credibility and influence on these agencies.

D.4.4 Public and Governmental Information

The Commission staff saw these responsibilities as an important part of their role. Care is taken to keep legislators (both at the State and Federal levels) informed about the CEC's policies and decisions, and to respond to issues raised. The Commission is one of only five State agencies which has separate full-time representation in Washington. The Commission also publishes a newsletter
to legislators, and Commissioners meet with California representatives a couple of times per year.
The Commission also produces an attractive Biennial Report which outlines proposed policies, goals,
and steps towards achieving these goals. It provides this report particularly to legislators, but also to
the general public. This report is supported by four technical reports which are available to
interested parties.

The Commission also focusses on keeping the public integrated into its process. The Commission
reports are widely publicized and available. The CEC also provides wide notice of its meetings and
procedures, and has staff individuals assigned to assist members of the public to participate in the
process. Copies of all proceedings are available on request.

D.5 Applications of CEC Experience to Water Agencies

CEC staff had many insights and suggestions to share with the water industry to assist in designing
a planning group. These focus on the impact of the differences between water and electricity; aspects
of the CEC that have been successful and could profitably be used as a model; and aspects of the
CEC that have been less successful. Their insights into approaches for forming a new agency were
discussed in Section 1.2 above.

D.5.1 Impact of Differences Between the Utilities.

A major difference between the electric and water utilities is the number of utilities in each. The
CEC performs forecasts for five control areas in California, which cover the majority of power sold
in the State. This is probably an upper limit to the number of areas for which forecasts similar to the
CEC's can be produced. If the CEC had been faced with the large number of agencies in the water industry, it would have evolved in a very different way. One possible response to this would be to group the numerous water agencies into regions with similar water sources or growth patterns.

The staff believed that transportation probably is most like water, with fragmented responsibilities both because of many local agencies, and because regulatory responsibility fragmented through many state agencies. The CEC appears not to have gained a good handle on transportation policies, in part because they have not concentrated on this area. There may be a combined cause and effect at work here, with the CEC spending less resources in the area because it would be so difficult to handle. Transportation questions are being handled by the growth control groups, which is probably where it best belongs; perhaps so does water.

Municipal utilities are the minority of electric utilities, and have resisted integration within the planning and regulatory process. For example, Los Angeles Department of Water and Power recently challenged the CEC's authority to permit a new power plant, citing its own authority as an independent arm of government. Currently, some of these municipals are beginning to see a benefit to being a part of the process, and slowly are becoming more involved.

D.5.2 Successful Aspects of the CEC

This section provides a review of the aspects of the CEC that the staff and Chairman Imbrecht believe have been important to the success of the CEC, and similarly would be important in a water agency with similar responsibilities.
The staff believed it was necessary to have a stable source of funding, outside the standard budget process. For the CEC, this is in the form of a consumption fee on electrical energy. This form of funding provides some protection from legislators who might be unhappy with particular CEC decisions or policies. The CEC also has funded a public advisor to assist inexperienced intervenors to become part of the process. This has increased the range of inputs to the process, and probably has increased acceptance of the results.

The CEC has used a significant part of its budget on contractors, who undertake many studies or training programs. The water industry might want to follow this example, and hire consultants to develop methods which are consistent with any guidelines that the industry might develop, and then go to the districts to train smaller utilities' staffs.

The Staff stressed that the objective or guiding principles of any group should be clearly specified in the enabling legislation or rules. The CEC's responsibilities and goals were clearly defined, which acted as a focus for the early work of the CEC. It also protects the process from undue influence of special interest groups. The fact that the Commissioners are appointed by the Governor and because of specific skills also adds credibility to the process. The professional background of the Commissioners has proven useful, and gains the Commissioners more respect from utility management. It need not rule out political connections, and each Commissioner has access to a Hearing Officer if procedural questions arise. Certainly any water group should not be restricted to representatives of water utilities; this would undermine both the credibility and authority of the group.
It was also felt to be essential to have a strong Chairman to give a unified direction to the Commission's efforts. Rotational chairmanships do not give consistent direction to staff. Initially, the Commission was pulled in several ways, as each Commissioner directed staff towards separate goals. The appointment of the Chairman by the Governor (with renewal every two years) assures staff, intervenors and other Commissioners that the Chairman has the Governor's confidence. This can provide additional authority to the Chairman's decisions. The requirement that at least one Commissioner be present at all hearings has also been successful; it allows at least one member of the Commission to become fully educated on a particular topic, and reassures intervenors that they have direct access to decision-makers.

A further important factor is that the CEC planning process is iterative, with a new Energy Report being produced every two years. This consists of a short, attractively-presented summary report backed up by four volumes of technical documentation. The Report outlines policy issues facing the State, and suggests goals and steps to achieve these goals. The Governor must review this report, and approve it either in whole or in part within sixty days. This process forces energy issues before the Governor's attention on a regular basis. The regularity and frequency of the process also allows the Commission to shift goals in the face of changing circumstances.

The Commission's process also has shown a significant change in form over time. Initially the Commission leaned heavily on a hearing process. Over time, it has come to depend more and more on workshops, where technical staff from the Commission, utilities and intervenors review methodologies and assumptions. These workshops have provided a forum for these specialists to share ideas and approaches. This has led to a convergence of all the groups as the techniques which
best withstand the peer review process become more widely adopted. It also means that many issues are resolved before the hearing process begins.

D.5.3 Less Successful Aspects

This Section reports a review of some less-successful aspects of the CEC. These are a compilation of several interviews, and may not reflect the views of all of the individuals we consulted. Some factors, such as the importance of divided responsibilities, were shared by many; others reflect individual viewpoints.

Throughout the life of the CEC there have been repeated attempts to merge the divided responsibilities of the CEC and the CPUC. For any new water agency, the problem of divided responsibilities is likely to be an even greater problem. Reorganization of the authority of existing bodies may best ensure fewer "turf conflicts". However, such reorganizations are very problematic, and may be impossible -- very few such reorganizations have succeeded, even with broad-spectrum support. It will be useful to observe progress towards the reorganization required to establish the California Environmental Protection Agency.

Some staff stressed that any planning or regulatory authority similar to the CEC needs to be flexible in structure, to be equipped to deal with the problem which follows the one the organization was designed to respond to originally. For example, the current need may be to develop goals for reliability and plans for achieving this; future problems are bound to include a requirement to manage aquifers. The structure should be flexible enough to respond to this wider range of needs. The CEC was set up to examine the need for and the siting of 1,000 MW generating units. These are no
longer being built; the more typical size today is 100 MW. Many of the CEC procedures are not well-suited to today's smaller plants.

Several staffers expressed concern that the CEC has "taken over" much of the utility planning activity. The Commission was given broad powers, which probably were necessary to achieve the initial goals. After an early period of controversy, this appears to have led to somewhat passive acceptance of the Commission's forecasts. This acceptance has reduced the internal corrective ability of the open planning process. One commission staffer suggested that the current situation could be improved by the Commission playing a less-active role, concentrating less on micro-managing, and more on setting the framework within which the utilities operate.
APPENDIX E: CALIFORNIA COLLABORATIVE PROCESS

E.1 Summary

The California Collaborative Process brought together electric utilities, regulators, intervenors and environmentalists to develop a common program for energy conservation. This process shares some aspects of the Best Management Practices development in the water utilities, and may not add a great deal of knowledge to our quest for a reliability structure. However, it is one of the few examples of groups with opposing agendas agreeing to work towards a joint goal. A similar process may be required at some stage in the future of the water industry. For example, the experience gained in this process might be useful in the Three-Way discussions of California Water policy currently being conducted between agricultural and urban water leaders and other environmental organizations.

E.2 Background

In the late 1970’s and early 1980’s, electric utilities were spending increasing amounts of money and effort on energy conservation. By the late 1980’s the supply situation had changed, and with declining marginal costs fewer programs remained cost-effective. The California Public Utilities Commission (CPUC) began to discourage utility spending on conservation, and the level of spending declined. In 1989 the Natural Resources Defense Council (NRDC) released a story which detailed this decline, and claimed that California was losing its preeminent status as a leader in conservation. This poor publicity led the CPUC to order various interested parties to work together to come up with common programs to recommend. If this was not achieved, the Commission stated it would design its own program.
E.3 The Process

The members came into the process with differing motivations. The NRDC wanted to save energy and reduce CO₂ emissions; the utilities wanted to reduce peak demand and correspondingly their required investment in plant; others wanted to minimize spending to keep rates from rising. From all these varying agendas, agreement was reached on the level and type of programs which should be implemented, and on the financial incentives to be used to encourage utility participation.

The major factor for which agreement was not reached was the valuation of environmental costs. All participants agreed that environmental costs should be evaluated and included in the analysis. However, no agreement was reached on the method of developing or the level of costs to be used. In part this was because the issue was being litigated at the same time before the California Energy Commission (CEC), and no agent was prepared to concede in the collaborative process some point which they might need to use in that forum. In addition, the utilities were concerned that agreement on a valuation for environmental costs would change drastically the cost/benefit analysis of their existing plants, and might require them to purchase more power from cogenerators and close down existing plants.

E.4 Why the Process Succeeded

The process succeeded in its major goals: that of drawing up a prioritized list of approved demand-side management programs, and procedures to encourage utility promotion of these programs. In addition, it succeeded attaining unexpected progress in improving relationships and cooperation among diverse groups. There were two main reasons for the success of the process. These were:
• The threat of CPUC action if satisfactory conclusions were not reached. This would reduce the parties' opportunity to influence the outcome.

• The efforts of Ralph Cavanaugh of the NRDC.

Mr. Cavanaugh appears to have gained the trust of all participants, and was able to promote negotiation and decisionmaking. One of the early goals of his group was to obtain a valuation procedure for environmental effects. When it was realized that insisting on this would jeopardize the whole process, the NRDC agreed to go ahead without reaching consensus on this issue.

The process was helped by the fact that all participants were familiar with the issues, but hindered at first because no one was sure how the process should be structured. Early meetings achieved little but arguments over process. Speakers and experts brought in from outside added to the shared knowledge base of the group and helped the movement towards closure.

E.5 Long-Term Effects

After the initial agreement was reached, an advisory panel was set up to monitor progress. Some members of the panel have required voluminous data reports, and in all, utility personnel estimate that the effort to keep the panel members informed has resulted in a ten-fold increase of effort associated with planning and monitoring conservation programs. Without the threat of Commission action, the advisory panel appears to lack clear direction and ability to reach conclusions. However, the process has increased trust between the participants, and relationships appear to have been formed which have lessened the hostility which existed between the groups. The experience seems to have made it more possible for the individual groups to work together on an informal basis.
E.6 Implications for Water Utilities

The Collaborative Process had narrowly-defined goals, with an external impetus towards closure. The issues in water may not be able to reduced to simple enough problems for this model to be useful. If the water utilities do decide to use this process, it is recommended that someone such as Mr. Cavanaugh be an early guest speaker, to assist in smoothing away some of the early procedural issues that dogged the beginning of the electricity conservation experience.

Another recommendation is that the process probably should not be conducted by a regulatory authority. There appears to be some reason to believe that regulatory staff are more used to a "command-and-control" situation, and, at least initially, may feel threatened by their loss of control over the process and the outcome. Utility personnel believe that this arises from the regulators expectation that they will be faced by disputing parties which they have the authority to decide between. When faced by unanimity among stakeholders, the regulatory staff may believe they have been bypassed in an unreasonable manner.

Regulators also expressed the concern that there was too little emphasis on measurement of program effects, and on cost-effectiveness of the programs that both the utilities and the NRDC favored. They saw their role as making an impartial decision. Given that this did not happen, they believed that the public interest was not sufficiently taken into account. The water agencies should be sensitive to the possibility that regulators or staff from state agencies might oppose the outcome of such a process, particularly if they are not involved in it. Care must be taken when deciding when and how to involve the players who could influence acceptance of the final outcome.