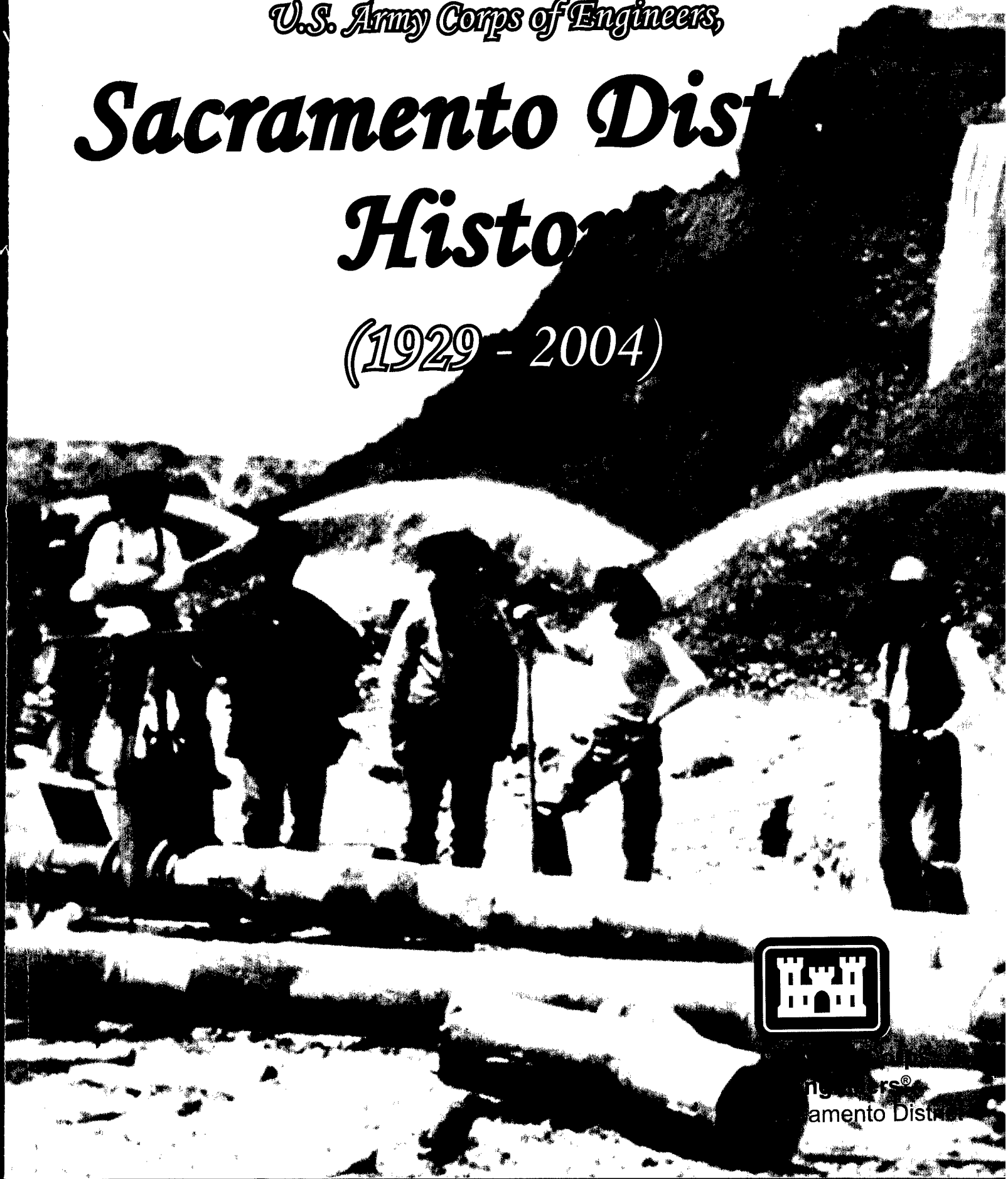


U.S. Army Corps of Engineers,

Sacramento District History

(1929 - 2004)



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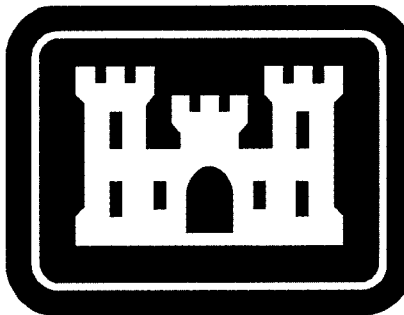
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A look back at the last 75 years of the Sacramento District



**US Army Corps
of Engineers®**



Sacramento District

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Chapter 2

The New Melones Dam Project:

Riding with the Changes

Perhaps no other Corps project so typifies the culture of change that engulfed the Sacramento District in the 1960's and 1970's as the New Melones Dam Project. This project broke ground in 1966, but not before years of environmental study, lawsuits, and hearings made it one of the most controversial Corps projects in the American West.

To fully understand the challenges of the New Melones Dam project, one must first look at the District's preceding two decades, which were marked by expansive growth followed by the development of a work force characterized by longevity and stability. These factors created a culture within the District that made adapting to the impending national culture of political and social change very challenging.

By the time the New Melones Dam Project came to the table in 1966, the District was already in the midst of adjusting to the realities of having to be accountable to vastly divergent interests that included river activists, environmentalists, farmers, and small-town valley businesses and area residents. This set the stage for the District's massive new project – the New Melones Dam. The story of its construction is one of an organization undergoing a trial by fire as it attempted to satisfy new laws and adapt to a new way of looking at the environment.

The Evolution of a Dam

The first Melones Dam was built on the Stanislaus River in 1926. The original dam had been built to provide irrigation water to local farmers. However, by the 1940's, floodwaters were rising perilously and frequently in California's Central Valley. The fears and worries of farmers and officials in that agriculturally rich region rose along with water levels. And rightly so, for a combination of heavy rain at the area's lower elevations and snow at the higher ones threatened to submerge crops. Approximately, 35,000 acres of farmland along the lower San Joaquin River and the Stanislaus River were at risk of flooding many delta towns including Oakdale, Riverbank, and Ripon. In 1944, Congress authorized the Flood Control Act of 1944, Public Law 534, to

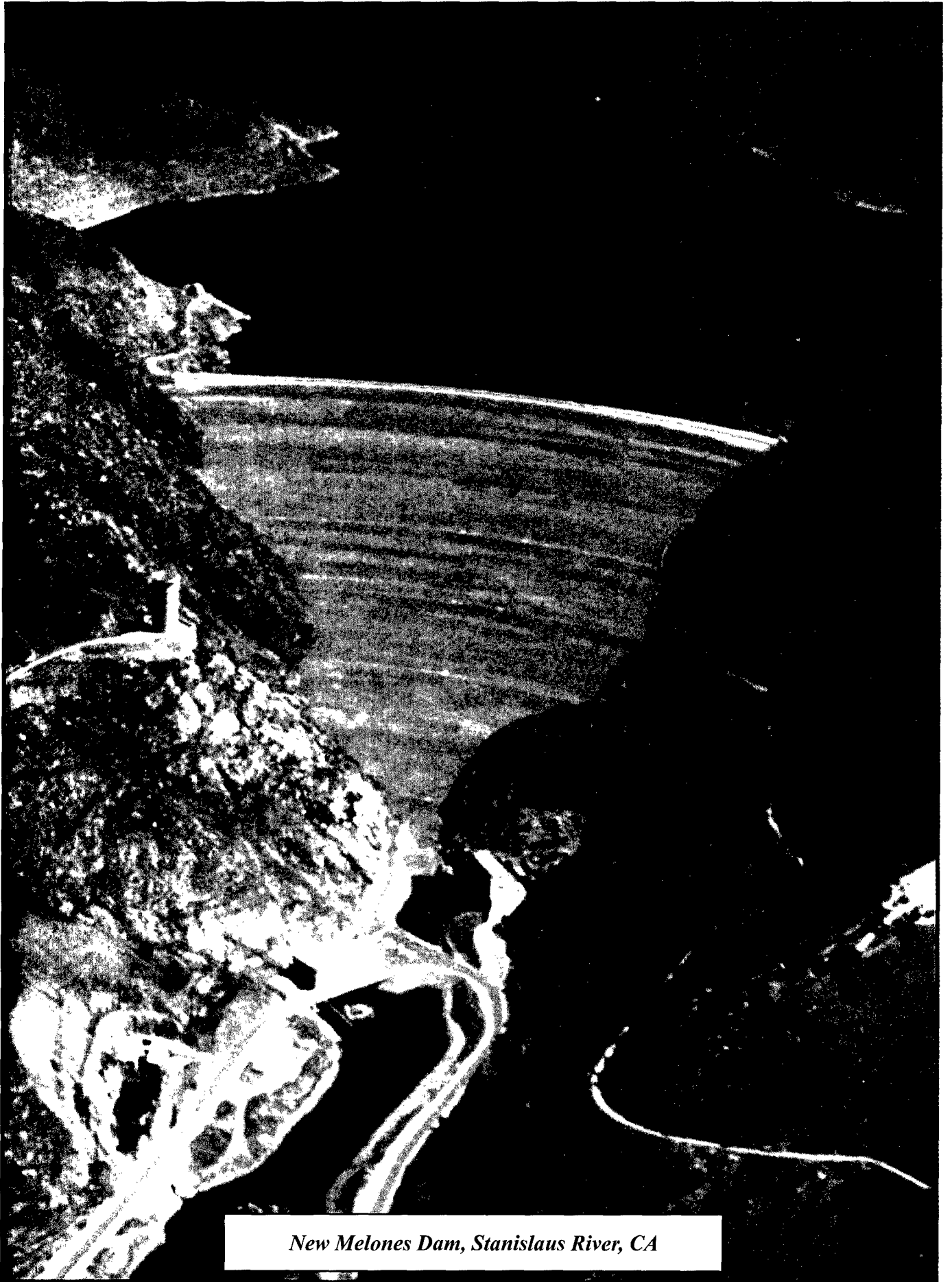
construct the New Melones Dam, to stanch potential flooding and also to serve local irrigation and hydro-power needs.

The proposal for the New Melones Dam, located 40 miles east of Stockton and 7 miles north of Sonora, prompted many discussions among the Army's Chief of Engineers, the Bureau of Reclamation, and the California Department of Water Resources. The central issue was how to balance competing interests in a single resource – the Stanislaus River. Tensions arose between the Corps of Engineers and the Bureau of Reclamation over the jurisdiction and administration of the Stanislaus River, as well as several other rivers. Congress resolved the interagency conflict over the Stanislaus in the omnibus Flood Control Act of 1962 by authorizing the Corps to build the dam and the Bureau of Reclamation to operate the dam and reservoir.¹ After several revisions to the original authorization, the proposed dam project took on some additional dimensions, including recreation, water-quality control and improvement, fishery enhancement, and environmental mitigation, and the District proceeded with the plans to construct the dam. As construction continued on the dam, the Sacramento District's Department of Real Estate acquired 27,000 acres of land in 197 tracts between 1968 and 1971.

On October 10, 1972, the initial contractor bidding for the project yielded the lowest bid of \$83.2 million, but with the delays resulting from the legal appeals, the original low bidder was unable to extend the bid, so a new request for bids in December 1973 resulted in the award of the contract for \$109,709,637 in March 1974. The contract was awarded to the joint venture of Guy F. Atkinson Company, Gordon H. Hall, and the Arundel Corporation, known as the "Melones Contractors," for the construction of the dam and appurtenances. In addition to the main dam, appurtenances, and the power plant, the contract included the construction of three bridges: Archie Stevenot Bridge on Highway 49, the Parrotts Ferry Bridge and road relocation, and Camp Nine Bridge and road relocation.

The project team members at the District overseeing the contracted work included Resident Engineer Joe Nelson, Assistant Resident Engineer T. Smith, Field Engineers R. Leatherman and R. Houtrouw,

The New Melones Dam Project



New Melones Dam, Stanislaus River, CA

Embankment Engineer Clark Stange, Resident Geologist Justin Moses, and Chief Inspectors H. Barz and J. Cogan. The District executed supplemental contracts for \$5.3 million to the Allis-Chambers Company for two power turbines, a \$6.2 million contract to General Electric for two 150-megawatt generators, and a contract for \$39,944.95 to the Melones Contractors for the construction of the power plant and appurtenant structures.

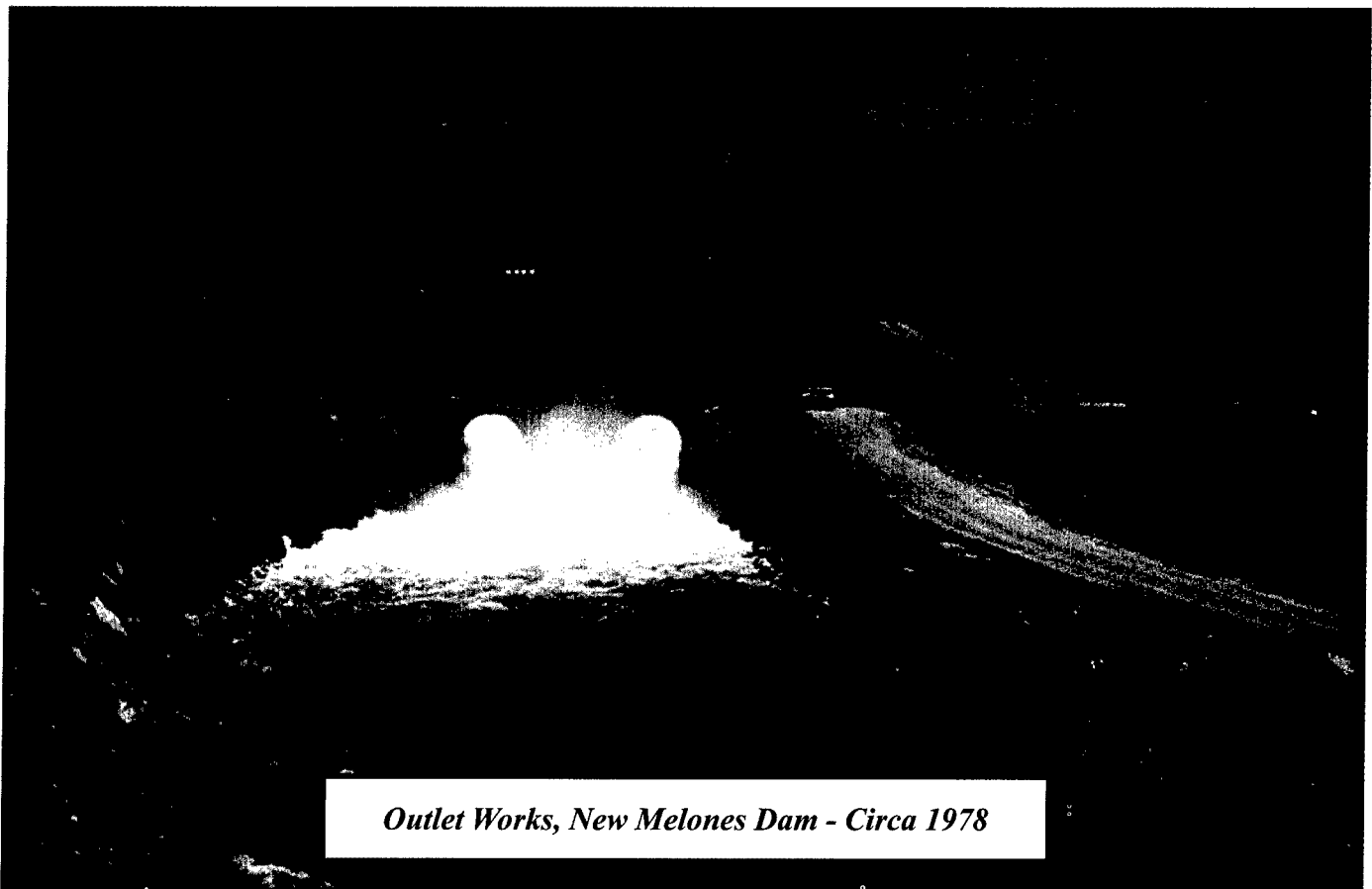
Construction of the Spillway and Powerhouse

For the release of overflow water from the reservoir, the District constructed an ungated spillway that extended for more than a mile and emptied into Bean Gulch, which is a small streambed that eventually joins the Stanislaus River near the New Melones Switch Yard.² The majority of material for the dam embankment came from the spillway excavation.

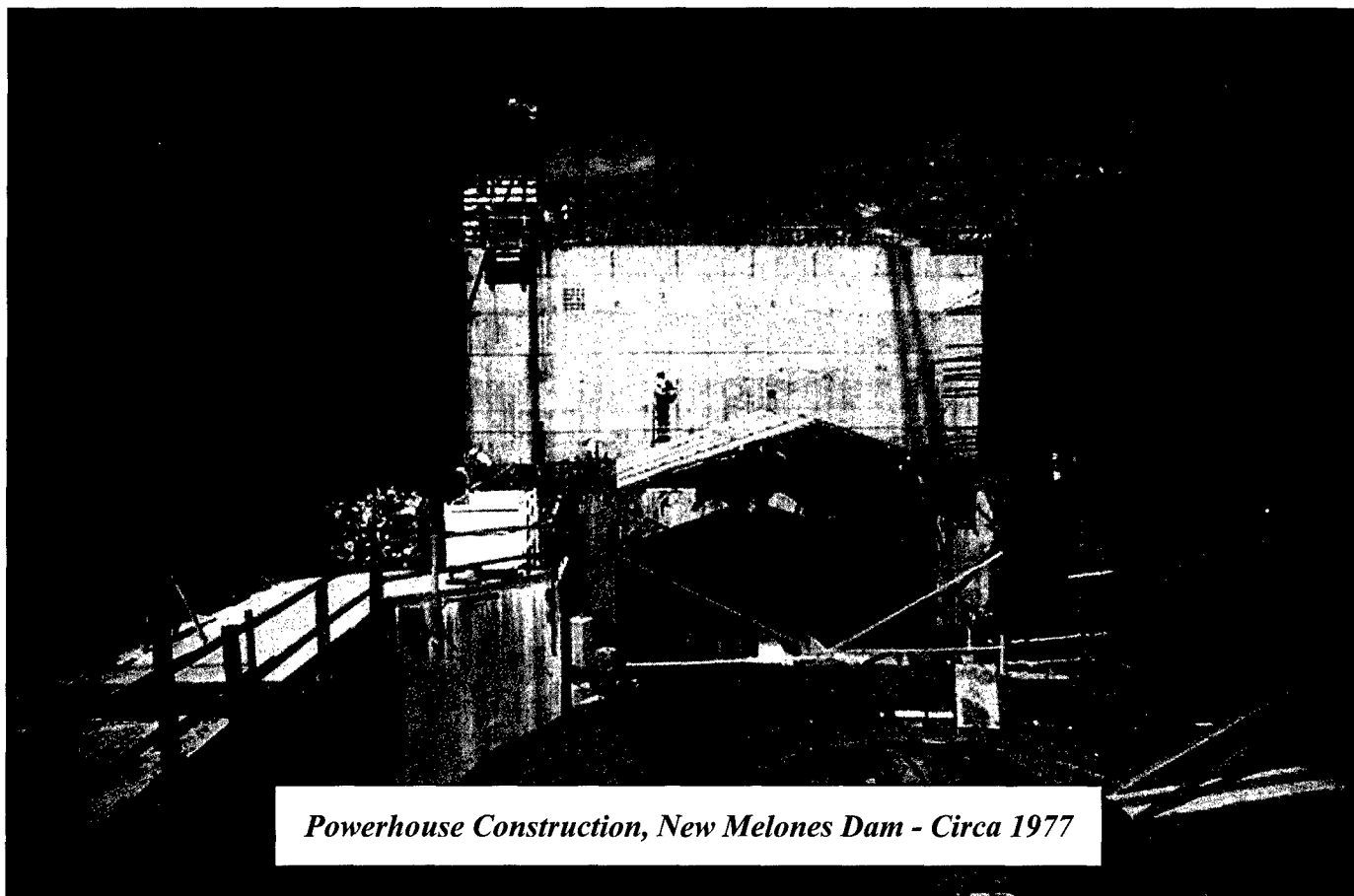
In addition to the spillway, the District oversaw construction of a two-unit powerhouse located on the north bank downstream from the dam. Construction

began on the powerhouse in 1976 with its completion in 1979. The powerhouse structure required the excavation of 278,000 cubic yards of earth and the placement of 75,000 cubic yards of structural concrete. Appurtenances of the powerhouse included outlet works, tailrace channel, and related structures. The capacity of the powerhouse's 300 megawatts, as well as the average generating capacity, is approximately 279 megawatts, resulting in approximately 455 million kilowatt-hours of energy annually. This is equivalent to the annual electrical requirements for approximately 72,000 households.

After overcoming many obstacles, the New Melones Dam Project was finally completed in 1978. At the time of completion, the dam was one of the largest and highest earth-and-rock dams in the United States. At 625 feet high and 1,560 feet long with a storage capacity of up to 2.4 million acre-feet of water, the New Melones Dam spanned the banks of the Stanislaus River 60 miles upstream from the river's confluence with the San Joaquin. From the reservoir's storage capacity, approximately 450,000 acre-feet of space are set aside annually to store floodwater during the rainy season. In 1979, the



Outlet Works, New Melones Dam - Circa 1978



Powerhouse Construction, New Melones Dam - Circa 1977

project was transferred to the Bureau of Reclamation for operation and maintenance.

Today, this multipurpose project provides flood control, recreation, irrigation, water supply, and hydropower, which generates 300,000 kilowatts of power – enough to satisfy the needs of 200,000 households.

The Historical Perspective of the Stanislaus River: Recreationists Discover the Stanislaus River

The deep rooted attraction to the river basin by the river activists and recreationists was one passion that furthered their opposition to the proposed dam, yet the river was once a place used by the local Native American Indians. Long before the area became a destination for outdoor enthusiasts, it

played an important role in the lives of the Central Sierra Miwok Indians. The California Gold Rush of 1849 spurred non-native development of the area, and by the 1890's, utility companies turned to the Stanislaus basin for hydroelectric power.³

By the mid-twentieth century, recreationists were discovering their own uses for the Stanislaus. Cave explorers, or “spelunkers,” first called attention not only to the caves along the river, but also to the Stanislaus as a spectacular river run. One such cave explorer was Ray DeSaussure, a white water rafter who explored the wilderness caves in the steep marble and limestone canyons along the river and marveled at the natural formations and the spectacular arrays of stalactites and stalagmites. Word spread about the beauty of the caves and the lovely river that ran through the canyons. DeSaussure's fellow Sierra Club member Bruce Grant organized an informal white water group in 1952 to explore the river and caves. A year later, this group became established as the Sierra Club's River Touring Section of the San Francisco Bay Chapter.⁴

By the late 1960's, the caves also attracted Friends of the River founder and environmentalist Mark

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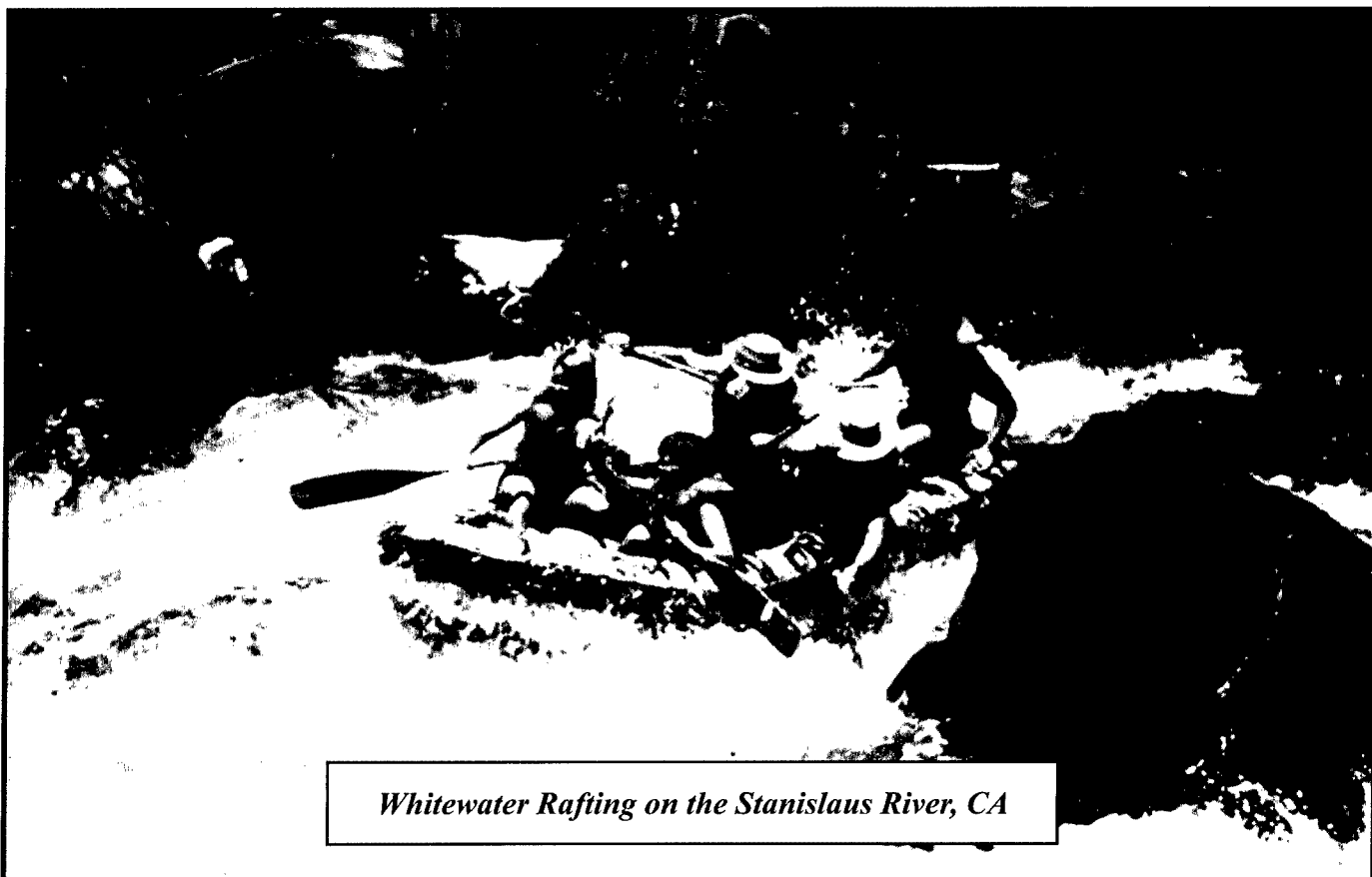
Dubois. Dubois stated, "After going down the river a few times, I started loving not only the caves, but also the magic of the river, the excitement of the white water, and just the beauty of the canyon and all of its wildlife."⁵

In 1962, Bryce Whitmore started Wilderness Water Ways after touring the river basin on a Sierra Club sponsored trip. After the company was established, it sponsored one of the first trips for the public on the Stanislaus River.⁶ "I had the river to myself for a year or two," recalled Whitmore, "until companies such as American River Touring Association and others began taking tours."⁷

Whitmore along with his rafting friends named many of the prized rapids on the 9-mile run from Camp Nine to Parrots Ferry: "Death Rapid," "Cadillac Charlie," "Bailey Falls," "Six Pack," "Rose Creek," and "Mutha."

It was evident that as the white water rafting business began to thrive, the river rafters themselves became some of the first major opponents of the New Melones Dam Project. The Chief of the Investigation Section C of the Engineering Division, Darryl

Salladay, worked on the project, and he stated, "As far as opposition is concerned, we were getting letters [of opposition] from people who were using the river for whitewater rafting."⁸ By 1965, business for Whitmore's Wilderness Water Ways skyrocketed after articles appeared in the California State Automobile Association and Sunset magazines describing the joy of river running and extolling the beauty in the stretch of the Stanislaus River from Camp Nine to Parrott's Ferry.⁹ Many kayakers, raft groups, canoeists, and skin-divers regretted not discovering the river years earlier and forestalling the dam. "How we wish these interested state officials could have been around ten years ago when the federal project was first being pushed by the Army Corps of Engineers!" they declared.¹⁰



Whitewater Rafting on the Stanislaus River, CA

An Era of Change: Complying with New Federal Environmental Policies

The shifting exigencies and public interest in the environmental movement, as well as the congressional enactment of numerous environmental protection statutes in the late 1960's and early 1970's, had a tremendous effect on the District. Some of the statutes passed included the National Environmental Policy Act of 1969 (NEPA), the Clean Air Act of 1970, the Clean Water Act amendments of 1972, and the Endangered Species Act of 1973.

In general, the Corps had to become more responsive to the environment. In the case of the New Melones Dam Project, the District had to understand what types of effects the proposed project would have on the limestone canyon of the river basin, the archeological and cultural significance of the caves, and the issues of where and how the irrigation water would be used. The change required that employees needed to be educated to the new political and environment climate, and this was a difficult task.

Brigadier General (Retired) George Fink, District Commander in 1969-1970 and also South Pacific Division Commander, 1972-1974, recalled how difficult change was for some of the older staff members:

One of the problems I had as both District and Division Engineer is that there were a lot of old-timers that had been around for 30 or 40 years, and the environmental movement was totally new. They had the experience [of] having been around and seen the floods and seen the droughts and they knew the...value of these projects. Therefore, they tended to be much less tolerant of these environmental people than, say, I was as a District Engineer who had only been around for a short period of time. They figured they were irrational and they didn't know what

they were talking about, so they just didn't want to deal with them.¹¹

The younger recruits were more receptive to changes, which could be attributed to their age and educational background. "I think at that time the younger graduates were coming out with more of a social concern and not so much technical because [they] had a broader education," recalls George Weddell, former Chief of Engineering Division.

The passage of the NEPA in 1969 (signed into law on January 1, 1970) forever changed the practices of Federal agencies. NEPA was considered the most important and far-reaching environmental and conservation measure ever enacted by Congress. The timing for the construction of a massive project like the New Melones Dam proved to be a trial by fire for the Sacramento District during this environmental movement. Joe Countryman, former chief of Civil Design Branch, stated that the project was "all new ground both for the environmentalists [and] for the Corps of Engineers. The Corps got very tentative... and...allowed the environmental community to take the initiative and control the press and a lot of the [public] response,"¹² Countryman recalls.

At this time, environmentalist and Sierra Club State Water Committee Chair Gerald Meral saw it differently. To Meral, the environmental struggle was uphill because the Los Angeles Times and the Sacramento Bee news coverage was pro dam, while the San Francisco Chronicle's coverage barely gave the environmentalists a marginal hearing.¹³

The Corps had to contend with more than environmentalists, river activists, and environmental impact statements. Congress also required the Corps to adhere to many laws like the Fish and Wildlife Coordination Act of 1934, which was put in place to protect, rear, stock, and increase the supply of game and fur-bearing animals. Amendments to the act in 1958 added provisions to recognize the vital contribution of wildlife resources to the nation. Several other statutes that the Corps had to comply with included the U.S. Historic Preservation Act of 1966, which allowed preservation of historical and archeological sites. Two years later, the Wild and Scenic Rivers Act of 1968 provided that select U.S. rivers and their immediate environments be preserved in

free-flowing condition because they possess remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

In addition to the new Federal statutes, environmental protection mandates also emerged at the state, county, and local levels, including the Delta Water Protection Act of 1959, the California Environmental Quality Act (CEQA), and the state Wild and Scenic Rivers Act.

The Environmental Impact Statement: The New Melones Dam Battleground

The District's project team members working on New Melones Dam not only had to understand and comply with new Federal laws, they also had to deal with a new kind of environmental activism. The District released the final Environmental Impact Statement (EIS) for the New Melones Dam Project in May 1972. District Commander James C. Donovan (1970-1973) recalls the difficulties of preparing the EIS at a time when the concept was new:

When we received changes in our operating procedures that required EIS's, we all looked at each other and said, "What is an EIS?" We had to devise a method of writing one and put ourselves in the place of Congress, who had passed this legislation, and try to live up to the spirit of the legislation. So we formed a civilian advisory committee and worked with a group of consultants to help prepare the EIS. The guidance we received from the Office of the Chief of Engineers about the content of an EIS was minimal. The entire Federal establishment had to adjust to the requirements of NEPA, and no one knew really what an EIS was supposed to be exactly. But we were going to make a complete, accurate, and professional statement about the impact of New Melones on the natural environment and on the human environment. We were very clearly pioneers.¹⁴

Under Colonel Donovan, the District halted the bid-solicitation process for dam construction in the middle of drafting its final EIS. Donovan wanted to assure himself and the public that the Sacramento District had done everything possible to comply with the new policies and laws regarding the environment.¹⁵

Darryl Salladay, Chief of the Investigation Section C of the Engineering Division, recalled that one of the major arguments from the river activists and environmentalists was the EIS did not address the use of water, for example who was going to use the water and how would it be allocated.¹⁶ The Bureau of Reclamation ended up preparing the supplemental EIS that addressed the use of the water.¹⁷

Even after the submission of the final EIS, several issues surfaced. The first situation was known as the "white water issue." The river activists wanted to keep the stretch of river known as "Camp Nine" untouched for recreational purposes. The proposed project for constructing the dam and filling the reservoir would ultimately destroy this section of the river. The District had no option but to list the "whiter water issue" and the conflict that arose as an "Adverse Environmental Effects Which Cannot Be Avoided" (in the language of the EIS).

The second obstacle the project team members faced was that NEPA required an alternatives analysis be written for the proposed action. This was documented in a six-page chapter in the original EIS, which outlined the alternatives. Yet, the Environmental Defense Fund (EDF) still considered bringing suit, maintaining that the alternatives were insubstantial at best, and that "the entire report is written under the presumption that the project will continue to be built as presently planned."^{18 19}

Still another significant issue was where and how the dam's irrigation water would be used. New Melones Dam was expected to yield 285,000 acre-feet of irrigation water annually. The project's feasibility studies assumed that this water would be used in the Stanislaus River basin, with any surplus diverted to the southern San Joaquin Valley through the Central Valley Project's aqueduct. Environmentalists opposed "further diversion of water from streams draining into the Central Valley without first assur-

The New Melones Dam Project

ing that water quality needs in the Sacramento-San Joaquin Delta would be met."²⁰ Also, in the response to comments to the EIS, the Sierra Club indicated that its primary concern was "the proposed use of the water in the East Side Division."²¹ (The East Side Division is defined as New Melones Dam, the reservoir, and the Stanislaus River.) Members felt that there was ample evidence of an overproduction of agricultural crops in California (therefore the water could be better used elsewhere).²²

Stopping the Dam in Defense of the River: New Melones Dam Project Goes to Court

In challenging the dam, the river activists and the environmental interest groups drew strength from NEPA. At the time NEPA was passed, it was said to have been the "Magna Carta" of the country's environmental movement. The essential purpose of NEPA is to ensure that Federal agencies give the same consideration to environmental factors as to other factors in making decisions. Therefore, it was the responsibility of the Federal Government to administer Federal programs in the most environmentally sound fashion. NEPA established the Council on Environmental Quality (CEQ) in the executive office of the president. The CEQ's duties included advising the president on environmental issues and interpreting NEPA provisions for agencies and the public. NEPA also required archeological surveys be completed for Federal projects. It also mandated that public documents, such as environmental assessments, be prepared, which weighted the environmental costs of the proposed project and how to prioritize environmental concerns.²³

Following the creation of the EPA in 1970, political resistance to Federal water projects increased, and from review of the associated environmental document, public scrutiny of such projects and participation in their reviews soared. The resistance to this project increased popularity of the Stanislaus River among rafters and other recreational users, which also added to this resistance.²⁴

The District having to comply with the new Federal laws and regulations not only attracted criticism from environmentalists, but also opened the door to legal suits from private organizations. In 1972, long-time Corps critic Gerald Meral, Sierra Club State Water Committee Chair, noted the growing popularity of court actions. The EDF's consideration of the New Melones Dam project as a potential candidate for court action pointed to the many conservation organizations and the (EDF) tactic to forestall Corps' projects by using lawsuits. EDF's method used scientific knowledge and the testimony of scientists as defense in the courtroom.²⁵

In June 1972, the EDF succeeded in halting the project for an entire year with a lawsuit.²⁶ The white water rafting companies, such as American River Touring Association, Adventures Unlimited, American Guides Association, Outdoors Unlimited, White-Water Expeditions, Wilderness Water Ways, Wilderness World, River Adventures-West, Duncan-Coldwell, and the Sierra Club, joined the EDF in the suit against the District. Three issues were mentioned in the suit opposing the project. The first issue was for the preservation of a stretch of white water that had become a popular recreational rafting course. The second issue was for the inundation of one of America's deepest limestone canyons, and the third issue mentioned was for the archeologically and culturally significant caves located in the canyon. Later, EDF then added to its concern over the projected use and storage of the irrigation water.

In yet another turn of events, the Sierra Club State Water Committee Chair and staff scientist for EDF, Gerald Meral, organized the scientific evidence against the dam, asserting that the District had evaded the benefit-to-cost ratio by inflating the benefits and underestimating the costs, thus making the proposed project the preferred alternative. Furthermore, Meral argued that the District grossly exaggerated the projected recreational use for the reservoir. The District Court for the Northern District of California heard the case in the fall of 1972, and on November 14, 1972, the court ruled that the EIS was adequate and ordered a supplemental EIS be prepared to address particular issues like the preservation of the archeological artifacts.

In January 1973, the District filed the supplemental EIS, which the court declared adequate the following March. Opponents of the dam challenged the ruling on the supplemental EIS, taking it to the United States Court of Appeals for the Ninth Circuit. The court upheld the District Court's ruling, and the United States Supreme Court, to whom the opposing groups went next, refused to hear the case.²⁷

The motives of EDF for the suit were beginning to be questioned by the project proponents. According to historians W. Turrentine Jackson and Stephen D. Mikesell, there had been some newspaper accounts and editorials that suggested the suit was simply a means of protecting the direct financial interests of the various commercial rafting companies that were among the plaintiffs in the case.²⁸ The rafting activists denied the charge. "We were on a parallel track with EDF," declared Dick Linford, a co-owner of Echo, a white water-rafting company. "This is a great river. We can make a business here."²⁹ What a lucky spot to be in – to be environmentally correct and be able to make a business go."³⁰ Friends of the River's Mark Dubois agreed: "We all fought for the place that we fell in love with. In some cases, there was a financial connection, but in most cases, it was a love affair with a place."³¹

To the rafting activists and other opponents, the issue was whether the District was complying with all the Federal requirements in good faith. The opposition also doubted that the District could oversee construction by private contractors and maintain quality control while complying with archeological preservation and other types of mitigation.

Potential Earthquakes Bring To Light Engineering Issues

Besides environmentalist opposition, the District also worried about the ever-looming threat of major earthquakes. The location for New Melones Dam is an area in the Sierra Nevada's foothills, which is known for its fault lines. The fault lines had historically been considered "dead" because of their advanced age and the nearly complete absence of

recent quakes. In 1975, that attitude changed when an earthquake occurred in northern California near the Oroville Dam. The District then reevaluated the New Melones' geological and seismological environment and hired the consulting firm of Woodward-Clyde. Seismographs were installed around the reservoir in an area 13 miles wide and 32 miles long. Woodward-Clyde recorded micro seismic activity before, during, and after filling of New Melones Lake.

The District engaged the services of several other consultants including Clark Stange, an Embankment Dam Engineer for the District, to offer the New Melones project engineers information on geological principles as well as design and construction criteria. These consultants became known as the New Melones Board and were specialists in the fields of engineering geology, applied soil mechanics, and geotechnical engineering.³² In a July 1977 meeting, the Board found that the embankment of New Melones was stable enough to endure large-magnitude quakes.³³ The Board went on to explain that an earthquake on the magnitude of 5.7 had a 30 percent chance of occurring during the life of the project.³⁴ In addition, the Board recommended building an embankment dam that could withstand shaking from the known fault. Also, the materials necessary for such a large dam had to be quite specific in size and gradation.³⁵

Surveying and Protecting Cultural Resources

The New Melones Project was met with many challenges, such as flood control, environmental effects from the proposed project, and seismological concerns. The District also needed to consider the area's archeological, cultural, biological, and recreational resources. Although minimal surveying efforts began in the late 1960's to survey the river basin and adjacent canyons, it was not until the passage of Public Law 93-291 in 1974 that any real funding became available. Subsequently, it took time for the District to implement the surveys, and the costs were high. The \$2.8 million cost in 1976 for mitigation of the cultural resources made the New Melones one of the nation's largest cultural resources efforts, as well

The New Melones Dam Project

as the District's first large-scale cultural resource mitigation project.³⁶ Moreover, Federal laws and regulations were evolving during the course of planning and the construction of the proposed project, and thus the issue of compliance was not clear. According to Patti Johnson, the District Archaeologist, "the resource mitigation effort was a highly visible program and one that was easily challenged since decisions of what was important and how much mitigation was 'enough' were very subjective."³⁷ River activists and other opponents frequently questioned the adequacy of the District's cultural resources survey and mitigation as a means to delay project completion.

The endangerment of losing cultural property required the District to complete a cultural assessment study and to execute a Memorandum of Agreement (MOA) between the Corps and the state.³⁸ The MOA would allow thorough guidance for completing the assessment and implementing any avoidance and minimization measures. According to the former District Commander Donald O'Shei (1976-1979), the MOA represented a significant step toward realizing the overall project's completion. It required the approval from the State Historic Preservation Officer who had been appointed by Governor Edmund G. Jerry Brown at that time. O'Shei stated, "Without the MOA the project would have not proceeded."

Since the mitigation effects for the cultural resource process were so new, there was a learning curve not only for the State Historic Preservation officer, but also for the District and other Federal agencies, such as the National Park Service, the National Advisory Council on Historic Preservation, and the archeologists in the academic community. The large number of historic and prehistoric sites requiring evaluation in a relatively short period of time sometimes compromised the archeologists' ability to respond with meaningful research in the tradition to which they were accustomed.

Lewis Whitney, Chief of Civil Design Branch, recalled that the process was anything but smooth sailing. No one agreed with the mitigation recommendations for the cultural resources, whether they had worked on the project or not. Divergent voices complained about the process of the cultural resource compliance that had to be followed. Michael

Moratto, a consultant responsible for some of the District's archaeological surveying in 1974-1976, noted the conflicts between the timelines of the archaeological digs and the actual construction of the dam.³⁹ President Jimmy Carter's Interior Department staff, Whitney recalled, were not great advocates of the project, and some of the members of Friends of the River were pressuring their congressional representatives about the integrity of the Cultural Assessment Report. In one public meeting with the State Historic Preservation Officer to hammer out the MOA, the discussion became so heated that someone in the audience even threatened to blow up the dam, according to Whitney. Nevertheless, the Sacramento District and the State Historic Preservation Officer persevered and finally signed an agreement finalizing the MOA.⁴⁰

After the MOA was signed, evidence of a Native American presence at the New Melones location dating back to prehistoric times required that the District exercise extreme care to not damage these sites and the newly discovered artifacts. But according to Patti Johnson, the District's Archaeologist, the Corps recognized that there would be an "irretrievable loss" of data, whether it was from prehistoric or historic sites. A primary objective of the District was to preserve most of the sites above gross pool elevation. The Central Sierra Miwok objected to the dam in general and to the inundation of the burial place in particular.⁴¹ Whitney remembers "that the Central Sierra Miwok were quite concerned about the burial locations." It was through their concern that some of these grave locations above gross pool were preserved. However, the District's contractors and many other members of the archaeology community supported preservation of the sites. Patti Johnson sums up the problems as follows:

When the Department of Interior turned over responsibility for cultural resources mitigation to the Sacramento District in 1976, construction of New Melones dam was underway. The pressure to hurry before the dam was completed coupled with the need to hire a large number of field workers, some of whom were not trained in archeological methods, along with the requirement to work on numerous sites at once resulted in issues of quality control. Although this was recog-

nized early-on, remedies were not usually satisfactory.⁴²

In 1978, the publicity and voices of dissent around the District's cultural resource effects prompted the Secretary of the Interior to ask the Advisory Council on Historic Preservation to investigate the Corps' efforts at archeological and historical resource mitigation. From this meeting, a Joint Review Committee was assembled the following year to evaluate all of the mitigation efforts. The committee worked together with the Department of the Interior, the Advisory Council, the Corps, and the State Historic Preservation Officer, and concluded that the mitigation program was inadequate. On the Advisory Council's recommendation, the District formed an interagency task force of archeologists.⁴³ This task force visited the area in March 1979 and reported that: "(1) Inundation of significant cultural resources below the elevation of 808' was imminent and unavoidable given the evidence concerning the reservoir filling schedule as provided by the Corps of Engineers; (2) the majority of the cultural resource sites below the elevation of 808' have been suitably recorded; and (3) additional studies were needed of the resources below elevation 808."⁴⁴

Shortly after the Joint Review Committee made the recommendations, a General Accounting Office document was made available and reported that "the Corps efforts to preserve archeological and historical resources at the New Melones Dam project in California had been clouded by the lack of Federal guidance on the adequacy of archeological preservation."⁴⁵ In addition, the results of a 1974-1976 cultural resource survey proved that this was one of the largest cultural resource mitigation projects the Corps had been involved in. The Stanislaus River, lying at the heart of the southern Sierra Nevada, had been a major route of travel for centuries. It was no surprise that the survey yielded a dense area of cultural sites along the river and the surrounding area. The survey showed that this region, which was a repository of more than 10,000 years of Native American cultural activity, was one of the richest archaeological sites in California. The survey encompassed 30,000 acres and documented 629 archeological sites, only 180 of which had been previously acknowledged. These sites included petroglyphs and approximately 66 known sites that may have contained remains of the

Central Sierra Miwok people. The survey also yielded a large number of Gold Rush locations from the 1850's, including cabins, mine shafts, miners' water diversion projects, mills, and mining towns. Lastly, homesteads, village sites, and cemeteries provided significant records of the early farming in California that took place after the Gold Rush waned.⁴⁶

Saving Caves and Endangered Species

A few of the caves set to be inundated were home to a rare *Banksula melones* or "harvestman" spider, which the District relocated before inundation. The Corps sponsored two transplants of the *Banksula melones* spider and other fauna from caves slated for inundation to an inactive mine shaft a mile and a half away. A considerable collecting effort went into this project, and another seven caves set to be submerged were also checked for the spider. While the District succeeded in transplanting the harvestman *Banksula melones* to a nearby mine, prior to the inundation of caves, in a follow-up study, the harvestman was found in 18 caves and is now considered safe.⁴⁷

The caves themselves, beyond their importance to the harvestman spider, were of concern. The Corps consulted the National Speleological Society and, based on their recommendations, the District mitigated the loss of the caves by purchasing and protecting other similar caves beyond the reservoir and project area. Lewis Whitney remembers questions being raised even before the filling began about the adequacy of the cultural resources work.⁴⁸

Camp Nine or Die: River Activists Fight to the Bitter End

Even as these various protective measures were taken with regard to the cultural resource issues, critics continued to oppose the project and object to the manner in which environmental effects were evalu-

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ated. Lewis Whitney and Joe Countryman felt that the opponents were out of line. Countryman says,

Out at Sacramento State, the environmental movement was getting started. I took a graduate course out there in water resources and the environment. It turns out the professors and the people they brought in to teach this class were [with] Friends of the River. One of the things that really galled me: you had a choice, you could turn in a final exam or a term paper for this project or you could attend the "Stop New Melones" rally.⁴⁹

Whitney remembers the river activists alienating members of the District by not first checking their facts before spreading the word that mistakes were made on the EIS.⁵⁰

River rafters also saw a direct threat to their treasured lower section of the rapids when, in the spring of 1979, the Corps added water to the reservoir to test the power plant's new turbines. Friends of the River leader Mark Dubois proclaimed that he would rather drown than watch the reservoir rise and promised to chain himself to a rock in the Stanislaus Canyon 2-1/2 feet from the water's edge.

In a three-page typed letter to Colonel Donald O'Shei sent the day before following through with his plan, Dubois informed Colonel O'Shei of his intentions. The District's intention was to keep the water level below the 808-foot elevation. Dubois resolved to hide in the canyon somewhere between the dam and Parrotts Ferry, locking his foot at an elevation of 2 to 3 feet above the dam's water level in hopes that his action would delay the filling.⁵¹ Dubois granted an interview to Harold Gilliam, who wrote an environmental column for the San Francisco Chronicle-Examiner. The story of his protest appeared May 21, 1979.

On Monday, May 21, 1979, after purchasing a star drill, I-bolt, and a chain from a hardware store, Dubois hitchhiked to the river. Approaching an historic mining site downstream, Dubois spotted a little cave behind a full-bloom buckeye tree just big enough to hide a person from sight. He chained himself there and waited to see if the District would begin to fill the reservoir. Longtime friends agreed

to check on him every other day until the water got to his knees, and then not return, fearing for his own safety. The Sacramento District informed Friends of the River that their intent was to limit the pool level to around 808-foot elevation and the Corps' control of the filling the reservoir was not precise. Governor Brown at a press conference also called for no filling above Parrotts Ferry. Dubois' collaborator padded in several reporters on separate occasions. Tom Harris from the San Jose Mercury News and Bill Rood from the Los Angeles Times both interviewed Dubois while he was chained to the rock. Dubois remained where he was from Monday to Saturday.⁵² The state's request that the filling of the reservoir stop at the 808-foot elevation is what made Dubois unchain himself.

Dubois' New Melones protest was partially effective. Then-governor Jerry Brown sent a telegram to President Jimmy Carter. Carter supported Brown's contention and ordered that water be released from the reservoir. This action affected road access to the power plant below the dam, and caused damages



*Mark Dubois,
Friends of the River
May 21, 1979*

to some downstream areas estimated at \$200,000-\$300,000.⁵³

The Corps action did not bode well with the project proponents of the dam. Chairman and board member of the Monterey Peninsula Water Management District William R. Gianelli, in an undated handwritten note to Colonel O'Shei wrote: "I find your action repulsive to those of us who have fought for years to get New Melones Dam built. When will the Corps develop a little back-bone!!"⁵⁴

Despite Dubois' action, there was skepticism as to whether he was ever actually at risk that day. Roger Janssen, a project engineer of the Sacramento District, did not believe Dubois was chained to a rock at New Melones reservoir. The Sacramento District had their park rangers along with the Bureau of Land Management employees and the sheriff's department with helicopters combing the canyon, but they did not find Dubois. While Janssen did not believe Dubois was in the lower canyon, most of the District did. Two television stations with cameras interviewed him chained to this rock with the water slowly rising. While chained to the rock, Dubois recalled hearing the search parties coming from miles away. He stated that at the sound of searchers, he could "just dig down into my little tiny cave and put a dead branch in front."⁵⁵

Filling the Reservoir

The actions of Mark Dubois in May 1979 seemed to galvanize the dam proponents and strengthen their resolve to complete the project. Joe Countryman remembers that Dubois' actions seemed to turn the tide of the project in favor of the pro-dam advocates:

The thing that made the project finally go was when the guy [Dubois] chained himself to the rock.... You know, when he went through that publicity stunt, that really galvanized the downstream people to a degree that they had never been before.... And they started getting 100 percent behind the project and doing everything that was necessary to get the project started. It really turned out to be the turning point for the pro-dam

*people. I mean this just really teed people off to an unbelievable extent.*⁵⁶

The proponents Countryman was referring to included four counties (Calaveras, San Joaquin, Stanislaus, and Tuolumne) and five cities (Escalon, Modesto, Oakdale, Ripon, and Stockton), as well as local area water districts. In addition, the State Department of Fish and Game favored the project because of the positive effect it would have on the declining king salmon population. On many occasions during the progression of the dam project, these parties voiced their approval of the dam project in publicly held meetings and in the pages of California newspapers.

In retrospect, Dubois himself felt that the valley farmers' perception of the river activists and environmentalists did not help their cause. Dubois believed that the hippie-like appearance of the young urban refugees who were against the dam alienated and polarized them from the farmers and valley residents who supported the dam.⁵⁷

At this time, the tides were turning, and Darryl Salladay, the Chief of the Investigation Section C of the Engineering Division, worked on the project and remembers the Corps learning from both supporters and opponents. The farmers and others who stood to benefit from flood control began a "Build the Dam" campaign, which ran counter to the environmentalists' "Camp 9 or Die" campaign. The District valued both local and state support. Salladay also recalled that the evolving environmental laws, like complying with the Endangered Species Act, was a far cry from the simpler compliance requirements formerly mandated by such agencies as the U.S. Fish and Wildlife Service.⁵⁸

Lessons Learned and Post-New Melones Effects

As a direct result of the struggle over the New Melones Dam Project, the Supreme Court began advocating closer Federal-state cooperation when dealing with Federal reclamation projects. Former District Commander Donald O'Shei (1976-1979) recalled that the lessons learned were "primarily political" and reactionary. The New Melones project had been the subject of a state referendum placed before the voters. At the same time Jerry Brown ran for his first term as Governor, the initiative to limit the size of the New Melones Reservoir (Proposition 17) was on the ballot. The measure was defeated, and Jerry Brown was elected as Governor. The Brown administration took an ideological tact, which was perceived as anti-technology and anti-big project.⁵⁹

The controversy and complicated new state and Federal environmental statutes enacted during the New Melones days markedly affected the District. For one thing, the District modified its response to public concern for the environment and increased public participation strategies during the project planning stage. Colonel O'Shei (1976-1979) felt the District became flexible and was open as a result of the project:

Historically, the Sacramento District had the reputation of being a rather hardball organization. I think that we had tended to display a lot more flexibility than perhaps some of our leaders were looking for or expected from us at that time. I think eventually that this display of flexibility really got the job done ... [I]t became the corporate wisdom of the District, and I think the Sacramento District probably never was as hardheaded an organization as their reputation was credited with.⁶⁰

The Chief of Civil Design Branch, Lewis Whitney, believed that the Corps performed admirably in the face of controversy. The New Melones Dam was one of the first projects subject to the new California and Federal environmental laws. Whitney remembers a slogan born then which said, "It isn't we and the environmentalists. We're the other environmentalists."⁶¹

River activist, Gerald Meral, saw a different effect on the Corps and Sacramento District. The New Melones era was a time of tremendous change for the Corps. The idea of environmentalists placing a measure on the ballot and challenging a Corps project shattered the Corps' belief that they enjoyed broad based public support. That the Corps came close to losing the measure was a big shock, having a psychological effect on the agency. The Corps wanted to be loved and not controversial, but yet they were controversial.⁶²

During Colonel Donovan's tenure (1970-1973), some river activists and members of the local Sierra Club began working closely with the District. The group endorsed the lower river plan for a white-water run on the Stanislaus River, which revived a



Parrotts Ferry Bridge

section of the river. Corps Lieutenant General Frederick J. Clark called the white water run a “model of the Corps’ new concern for the environment.”⁶³ The local Sierra Club’s water resources coordinator wrote a letter to the Secretary of the Army extolling “Colonel Donovan’s sensitivity to environmental concerns and recommending” him for a promotion in the middle of the litigation.⁶⁴

In April 1974, in response to Friends of the River’s circulation of the statewide petition to place the “Save the Stanislaus” initiative on the ballot, the District’s Public Affairs Office issued a brochure entitled “The River Initiative: ‘The Other Side of the Coin’” giving the Corps’ side of the story.⁶⁵ In March 1976, perhaps in response to the failure of Senate Bill 1482 to place portions of Stanislaus River from Camp Nine to Parrott’s Ferry in California’s Wild and Scenic Rivers System, the Public Affairs Office issued another brochure entitled “New Melones Lake: A Fact Sheet.”⁶⁶ Whitney remembers that project team members “were constantly reminding each other not to become project advocates.”⁶⁷ Joe Countryman recalls that the public’s perception of the farmers as proponents of the dam who were fighting the rafters made the public sympathetic to the farmers’ plight. In the court of public opinion, says Countryman, the farmers won.⁶⁸

While the river activists lost the battle over protecting portions of the Stanislaus under the Wild and Scenic Rivers system, three years later the Tuolumne River was saved as a result of its protection as a wild and scenic river. In the ensuing years three more rivers were added to the Wild and Scenic Rivers system—the Kings, Kern, and Merced. Dubois reflected: “Now, there’s more people who support the idea of setting aside more wild rivers for permanent protection.”⁶⁹

The New Melones fight had a local, regional, and national effect influencing the District, the South Pacific Division, and the Corps in general. At the dedication of New Melones Dam on July 11, 1979, Chief of Engineers Lieutenant General John W. Morris summarized the project as a test for the Corps as an institution, and remarked that no other Federal agency had been asked to change so much overnight and then successfully accomplish the change. In his

view, the New Melones project tested the Corps; the Corps passed.⁷⁰

Federal Priorities, States Rights

Further legal entanglements came about when the Bureau applied to the state for permits to store water at New Melones Reservoir. The State Water Resources Control Board replied in April 1973 with “Decision 1422,” which placed 25 conditions on New Melones water appropriations permits including storage restriction. The permits did not allow water for consumption or power generation to be stored in the lake. Then, in June 1973, the state sued the Bureau of Reclamation for a declaratory statement that the Federal Government is bound by the conditions of the permits. The Federal Government, in October 1973, counter sued the State Water Resources Control Board, seeking a ruling that would prohibit the state from placing any conditions on what was a Federal reclamation project. The Federal District Court ruled in favor of the Bureau, and 2 years later in October 1975, the Ninth Circuit Court affirmed that decision. However, when the appeal was taken to the U.S. Supreme Court, it ruled that a provision in the 1902 Reclamation Act allowed the state to impose conditions on “control, appropriation, use, or distribution of water in a reclamation project, which are not consistent with congressional directives.” While these lawsuits were pending in court, opponents of New Melones put Proposition 17 on the November 1974 ballot. It sought to limit the size of New Melones Lake. It was defeated.

On May 29, 1979, Assembly Bill 2164 passed, allowing New Melones Lake to be filled to capacity. When it reached Governor Brown’s desk, however, he vetoed it. A year and a month later, the Ninth Circuit Court would also uphold the state’s authority to put conditions on water permits and ordered the Melones Lake storage level set at 820 feet above sea level. Later that year the state Water Resources Control Board set the limit at 844 feet. This level kept the lake at just over 18 percent of its original capacity. The legal issue in this Federal versus state contest was whether a state body could make operation-

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al decisions about a Federal project, especially after the project had been authorized and constructed.

In an interesting twist and paradox, New Melones Lake reached and exceeded its state-imposed fill limit in January 1982, as a result of heavy seasonal rains. By the next year, the lake was flooding upstream areas, and floodwater was flowing through the spillway. After hearing arguments from the U.S. Government that the time was right to maximize the purposes for New Melones' (provide greater power and additional irrigation water), the Water Resources Control Board felt it could no longer justify withholding the Bureau's permits. In March 1983 it finally lifted all restrictions on filling New Melones Lake.⁷¹

In June 1987, the issue of where and how the dam's storage of irrigation water would be used re-occurred when the Bureau of Reclamation requested permission to divert additional water from New Melones. Friends of the River, which had fiercely opposed the filing of the dam in 1974, objected, stating that the Bureau's current application "admits much of the water in the reservoir has yet to be used, proving the Stanislaus Canyon was prematurely flooded." In short, there was not sufficient evidence of the need for so much water. Conservation Director Betty Andrews remarked: "They dammed the Stanislaus River in 1979, drowned the river canyon, and more than eight years later, they're still arguing about what to do with the water!"⁷² The South San Joaquin and Oakdale Irrigation Districts along with the state Department of Fish and Game objected. The protests ceased after the Bureau agreed to provide water releases for further studies on the fish population in the Stanislaus River.

Costs versus Benefits

Since its completion, the New Melones Dam Project has provided significant flood control protection. "[T]hrough 1993, the dam and lake prevented a cumulative total of \$128,500,000 in flood damage" according to Central Valley Project statistics.⁷³ The archeological studies conducted at New Melones project site resulted in some 416,000 artifacts being catalogued. Some of the artifacts are on display at the New Melones Visitors' Center.

The District also oversaw the construction of recreational amenities at New Melones, including a Visitors Center and a Administration Complex that started in 1990 and completed in March 1992. The number of visitors enjoying New Melones Reservoir has seen a steady increase over the years.

In the original design, the New Melones project team engineers ensured that the dam could supply 200,000 acre-feet of water each year. At the time of construction, this was a crucial projection, since current and future water shortages were of grave concern. That concern remains today, though the maximum supply is realized only intermittently.

The New Melones Dam Project cost nearly \$383 million to construct. Based on the Sacramento District's 1961 figures, the benefit-to-cost ratio of this endeavor was 1.7 to 1, meaning that the project would earn \$1.70 for every dollar spent on its construction and continued operation and maintenance. Critics of the project took issue with the Corps' 1.7:1 analysis, calling it an overestimation of benefits and underestimation of costs that was either inaccurate or intentionally biased. The project opponents cited evaluative errors in many areas, including irrigation, flood control, recreation, area redevelopment, fish and wildlife, and water-quality control. They insisted that the project life used to determine the ratio employed an incorrect interest rate and did not figure in various environmental costs.⁷⁴

New Melones saved millions of dollars in damage that would otherwise have been incurred during the floods of 1983 and 1997-1998. The New Melones Dam and reservoir have drastically lowered storm damages along the Stanislaus and San Joaquin Rivers during subsequent floods since the construction of the project. Over the last 20 years, the largest flood in the watershed occurred during 1997. During this event, the project reduced flows from 80,000 cfs to about 7,000 cfs. During the 1983, 1986, 1995, and 1997 storm events the project prevented damages estimated at \$13.1, \$103, \$2.1, and \$176 million, respectively.⁷⁵ Based on current (2000) price levels, this amounts to a total of approximately \$357 million in flood damages that were prevented. The project also helped reduce damages during smaller flood events.⁷⁶

In intervening years, however, California's droughts and legislation such as the Central Valley Project Improvement Act have limited the available water, leaving New Melones unable to meet its obligations for irrigation, water-quality improvement, and wildlife enhancement. The Stockton East Water District, which contracted for some of the New Melones water, has filed suit against the Bureau of Reclamation for failing to meet contractual obligations. The local fishing industry has also been adversely affected. When the dam water recedes to drought levels, the temperature of the water released by New Melones is too high for spawning and kills newly hatched fish.

Conclusion

The New Melones Dam became one of the District's first water projects to fall under contentious public scrutiny. It galvanized environmental and commercial interests. Former Brigadier General (Retired) George Fink notes: "New Melones Dam was progressing, but it got caught-up in this environmental movement. It wasn't that New Melones per se was a bad project, but it was the tenor of the times."⁷⁷

Today, the national mood has changed towards the building of large dam projects. Dam building in California has slowed since the New Melones fight. Since the construction of the New Melones Dam, the Sacramento District has constructed two additional large scale dams: Castle Dam in California and Little Dell in Utah. The only major dam built in the West since New Melones was the Seven Oaks Dam, a single-purpose flood control project built by the Los Angeles District, which was completed on November 15, 1999. Although Marc Reisner, the author of the book entitled *Cadillac Desert*, overlooks Seven Oaks Dam, his observation tells the story:

*Coincidentally or not, however, the filling of New Melones Lake brought the first Age of Dams to a close—at least in the American West. In California, virtually nothing has been built since. It has been the same everywhere else.*⁷⁸

On reflection, the construction and operation of the New Melones Dam can be considered a success story for the Corps and the Bureau of Reclamation. The dam stands as an icon of California's conflicting arguments over water and its uses – arguments that have affected other water-development projects and forever altered the degree of public participation in them. The Stanislaus River's Camp Nine was the most popular white water run in the West, and the river became a national symbol for river conservationists.

The story of the New Melones Dam Project is an example of how the District, besieged by legal battles, negative publicity, and other attacks, can still emerge successful, having learned important lessons. The interpretive exhibit at the New Melones Visitor Center entitled "The River vs. The Dam" fairly and succinctly explains the larger conflict as such:

*Throughout the 15 years of design and construction (and beyond), the New Melones Dam became a forum for heated debates, revealing the often complex and convoluted process by which water projects are conceived and completed. The debate involved valley farmers, river activists, conservationists, archeologists, economists, state water experts, Congressmen, and thousands of citizens who had a stake in the dam, the land, and the river. Such battles over water use in California abound and solutions are rarely perfect. In the end, the benefits of larger water supplies, flood control, increased electricity, and irrigation do not come without losses to individuals and the environment. The New Melones struggle, like other water struggles, points to an America with conflicting priorities – our need for water and energy continues, yet our desire to protect and preserve natural beauty remains strong.*⁷⁹

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Endnotes

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Sacramento District History



*Documenting the past 75 years
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