

MX:*A four-page special inside*

High Country

news

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Former WPPSS engineer says:

Washington nuke plant has unsafe welds

by John Soisson
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If all goes according to plan, the Nuclear Regulatory Commission will soon give its blessing to the Washington Public Power Supply System's nuclear plant number two. Next September, fuel rods will be loaded into the reactor and in February, 1984, the \$3.2 billion plant will go on-line and begin feeding electricity into the power grids of the Northwest.

At least one man who knows WPPSS 2 says that shouldn't be allowed to happen.

Welding engineer Stuart Sandler arrived in Richland, Washington, in May, 1978, while contractors at WPPSS 2 were in a frenzy. Large numbers of defective welds had been found in the beam and girder structure that surrounded the reactor. That structure supported walls and a labyrinth of pipes. Technicians were attempting to pinpoint the cause of the extensive weld failure.

When Sandler showed up for his new job as a welding engineer for Burns and Roe, the architect/engineer of the plant, crews were working day and night repairing the bad welds and trying to get construction under way again. The delay was costing WPPSS \$9 million a day and the plant was already \$500 million and four years behind schedule.

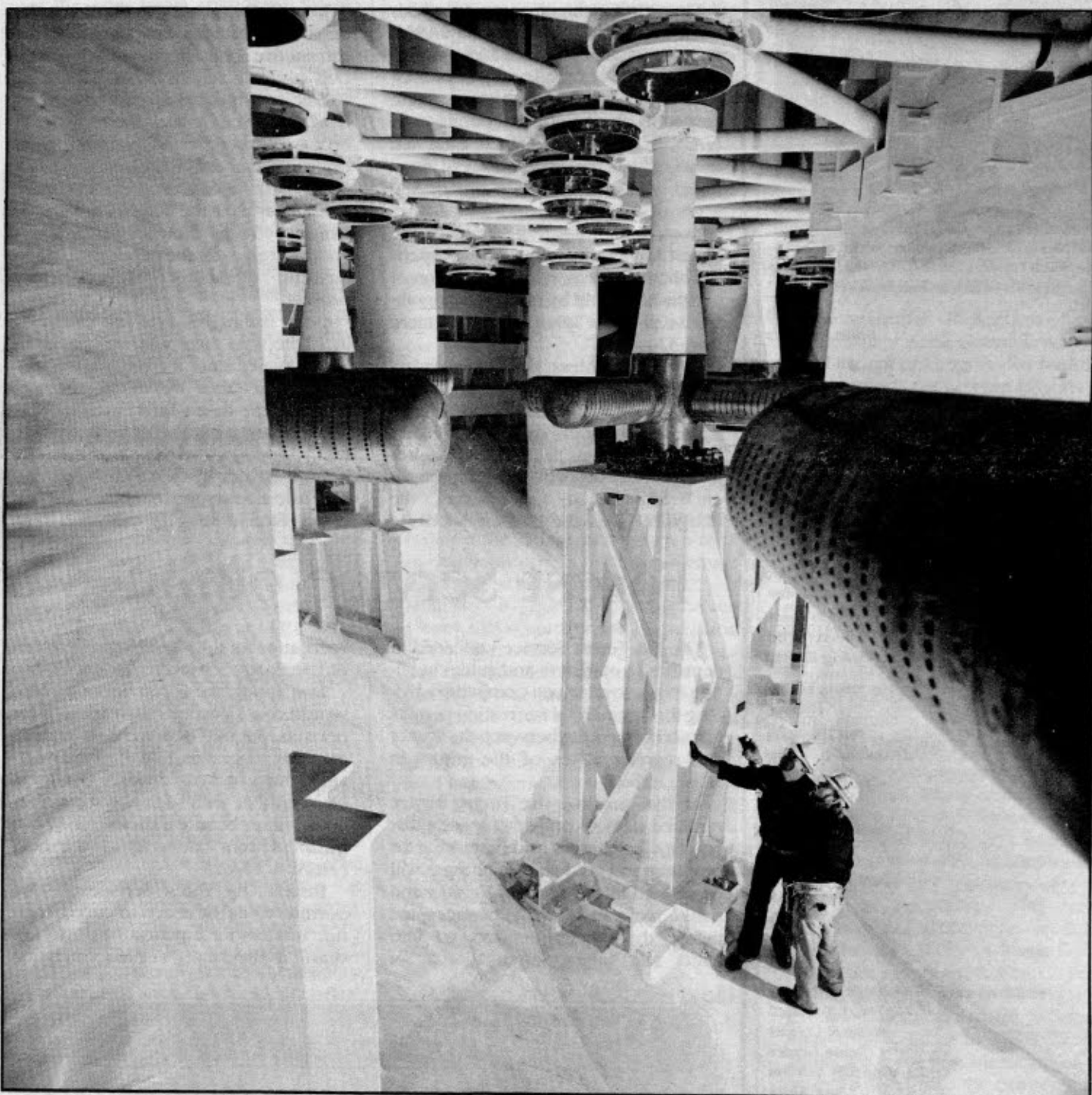
It would be Sandler's job to help correct the problems that had caused the welds to go bad in the first place.

With a B.A. in anthropology from the University of California at Berkeley and a B.S. in welding engineering from Ohio State University, Sandler had gone to work for Commonwealth Edison, the Chicago power giant, as a quality assurance engineer for welding at the Braidwood Nuclear Site, south of Joliet, Illinois.

A year later he answered an ad for welding engineers at WPPSS 2. Within a month he was working for Burns and Roe.

During the next year and a half, while repairs to previous mistakes took place, Sandler witnessed widespread violations of welding codes, and procedures that, he said, now call into question the plant's fitness for operation.

The problems weren't new. The WPPSS nuclear power project had been

*Pipefitters check structures in WPPSS 2*

plagued with troubles since the 88 member consortium had joined with the federal government's Bonneville Power Agency in 1969 and laid plans to triple the power supply in the Northwest in 20 years.

Five nuclear plants were planned, two at Satsop in western Washington, and three at the Department of Energy's Hanford Nuclear Reservation in southeast Washington.

The Hanford site was considered

ideal. All told, the DOE holdings there amount to 570 square miles, about half the size of Rhode Island. More than 1,000 acres were leased by WPPSS in the southwest corner of the reservation.

The lease was about three miles west of the Columbia River. The nearest community with a population of more than 1,000 was Richland, Washington. Within a 50-mile radius, studies estimated that there were about 200,000 people.

In May, 1973, the 1,100 megawatt Plant No. 2 became the first of the five to go into construction. The problems that began to haunt the plant almost immediately were a harbinger of difficult times for the system. By January, 1982, construction delays, cost overruns and decline in power demand had forced the system to terminate two of its plants and to continue work on a third with

(continued on page 12)

WESTERN ROUNDUP



High Country News

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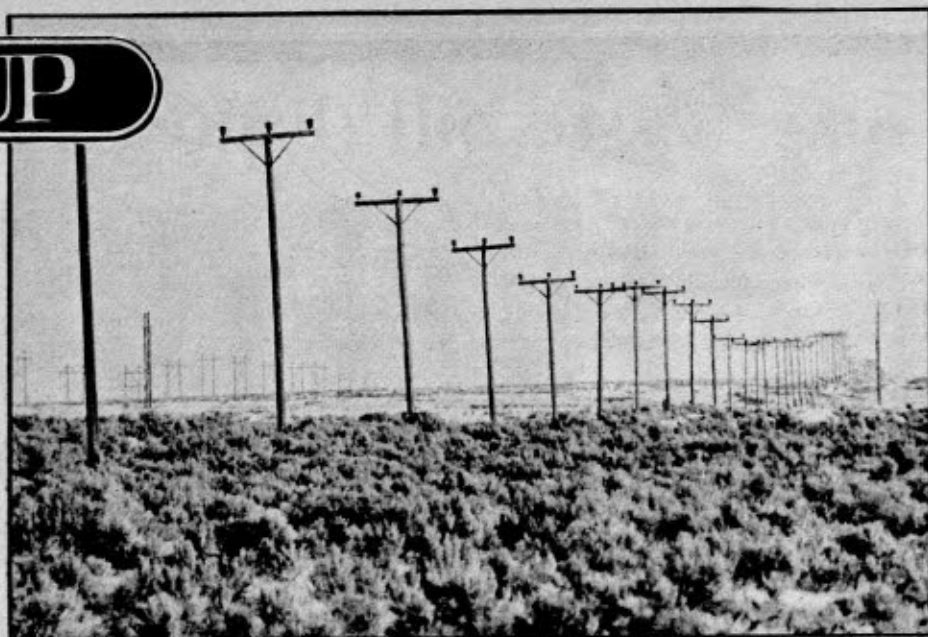
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Idaho solons help homestead project

After a decade and a half of litigation, the Bureau of Land Management finally proved in court that two large "homestead" projects in southwestern Idaho were developed fraudulently and must be returned to the federal government. But a bill introduced October 1 by Idaho Republican Sens. James McClure and Steve Symms would overrule the court decisions and allow the 26 people who organized the projects to now comply with the law and gain ownership of the land.

The 9th Circuit Court of Appeals ruled in August, 1981, and May, 1982, that the 4,400-acre Black Mesa project and the 3,700-acre Sailor Creek project, respectively, were schemes to create corporate farms out of public land (HCN, 9/3/82). The Desert Land Act, under which the projects were developed, allows citizens to obtain 320 acres of federally-owned land if they convert it to irrigated farmland. The Desert Land Act, passed in 1877, specifies that "no person or association of persons shall hold by assignment or otherwise prior to issue of patent more than 320 acres."

But at Black Mesa, the homesteaders turned over control of their individual acreages to Golden Grigg and Vanness Anderson, founders of Ore-Ida Foods, Inc., organizers of the Black Mesa project, and relatives of all the "homesteaders." Likewise at Sailor Creek, the entrymen — as the homesteaders are



Southern Idaho desert

referred to — leased their land to Farm Development Corporation, a business run by relatives of the Sailor Creek entrymen.

The McClure-Symms "private relief bill" supports the developers' contention that they were the victims of an agency changing the rules in the middle of the game. In a speech printed in the *Congressional Record*, McClure said, "This bill is necessary to eliminate the harsh and unfair results arising from the retroactive application of an interpretation of the Desert Land Act. The Sailor Creek entrymen were encouraged by BLM employees to lease their entries in order to ensure sound farming operations and a successful project. The Black Mesa farm operating contracts were made only after the BLM issued a decision in 1964 approving long-term leases and mortgages for the development and farming of another desert entry project."

Gene Babin, BLM land law examiner in Idaho, said there was no change in BLM's policy, since the original act specifically requires individual management of the desert land entries. "This was the argument the entrymen made with the court, and the court rejected it," Babin said.

While an entryman may hire someone else to farm his land, the entryman must

retain control over the land. In the August, 1981, decision, the 9th Circuit Court of Appeals said the entrymen "never actually possessed their entries, they did not choose their entries, and they had neither control of nor contribution to the development of the land or the marketing of the crops." The court added, "Congress never intended bargain-price desert land to be provided for the benefit of corporations or large landholders."

If the bill passes, the entrymen will be "watched very closely" to make sure they retain control of their land, said Dolores Blom, realty specialist with the Boise District BLM. But, she added, "It's not easy. There's no way for me to ensure they'll do that."

If the court decision had not been challenged, the now-developed farms could have been sold, traded or leased by the BLM — or simply left to revert to sagebrush.

A spokesman for McClure said the bill will probably remain in committee until after the lame duck session of Congress. In the meantime, Sailor Creek continues to be farmed by Farm Development Corporation despite the court ruling. The company has appealed the case, stalling any action by the BLM.

— Glenn Oakley

Forest Service outlines outfitter regs

The U.S. Forest Service conceded to demands by outfitters and guides by killing its proposal to use competitive bidding for commercial recreation permits at a recent meeting between the agency and representatives of the groups in Boise, Idaho.

At the meeting, the Forest Service outlined its new policy proposals that regulate fee charges and permitting for outfitters and guides. The changes will be printed in the *Federal Register* and public comments will be accepted before the regulations can go into effect, said Robert Safran, director of

recreation for the intermountain region of the Forest Service in Ogden, Utah.

Last spring, the Forest Service said it would consider competitive bidding for permits. But outfitters were so enraged over the suggestion, that the Forest Service has backed down. Outfitters claimed that with such a system, they could never be sure if they would be in business from one year to the next (HCN, 4/16/82).

Instead, the Forest Service decided permits would be issued to current permit holders for a period of up to five years if they meet certain operation

standards. Safran said those standards will be developed after the regulations become final by forest supervisors, state fish and game organizations and outfitters. He said the standards will differ from area to area.

Safran also said a daily fee will be charged based on the outfitter's daily charge to customers. Although it is not based on a percentage, that charge comes to about three percent per day of the outfitters charge to the customers. The lowest charge would be 25 cents for those charging between \$1 and \$8 per day for their services, and the highest charge would be \$9 for those charging \$300 and more per day.

Under current policy, all outfitters are charged 25 cents per day regardless of what they charge customers. Safran said this new policy is the Forest Service's attempt to base the charge on a fair market value.

Harold Turner, a partner in the Triangle X Guest Ranch near Jackson, Wyoming, was at the Boise meeting. He said many outfitters oppose the fee increases because they probably will run too high. In addition to the user fees, outfitters must pay \$100 per season for exclusive use of a specific site.

"Most outfitters cater to families and it will cause a burden on them," Turner said. "The fee increase will price some families out of using the service."

"There is a new philosophy in the government that says the users of federal land must pay for its maintenance," Turner added. "However, under this new policy, it is only one group — the outfitters — that are paying."

Dear friends,

Our intern here at HCN for the past three months has been Jeff Stern. Originally from Washington, D.C., Jeff is a 1978 graduate of the University of Wisconsin. After receiving his degree in biology, he worked as a hazardous waste inspector for the Illinois Environmental Protection Agency. In that position, "I always made sure that I never got near any hazardous waste," he said. "That stuff's dangerous, you know."

Just before coming to HCN in September, Jeff spent two months on a cattle ranch in Washington, working and growing alfalfa. Despite his ranching experience, he had never been on a horse until he came to Lander and went riding with Associate Editor Carol Jones. His other interests are skiing and pizza.

Jeff wanted to be an HCN intern to see if he liked writing. Of that particular quest, he says, "I haven't come up with a

final verdict for that yet." He did, however, find "learning to use the waxing machine very rewarding." That device applies wax to the back of the galleys so they will adhere to the layout paper.

After his term is up in December, Jeff says he will "either look for work or hibernate in Maine, or both." He is also planning to do one or two freelance pieces for HCN.

Thanks to your generosity, readers, the HCN Research Fund drive has topped the \$8,000 mark. We will be sending out our follow-up appeal this week in the hope that those of you who haven't contributed yet will be able to do so. Our goal this year is an ambitious \$25,000.

— the staff

— Carol Jones

Nuke waste bill disposes of states' rights

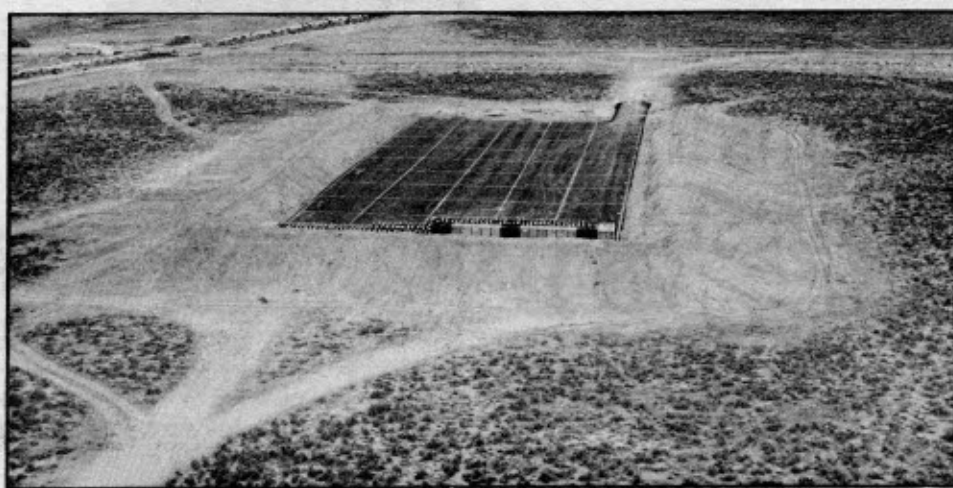
HOTLINE

With 40 years' worth of high-level radioactive wastes still in temporary storage throughout the country, the U.S. House of Representatives passed its version of the Nuclear Waste Bill last week. The bill contains a controversial amendment sponsored by Rep. James Broyhill (R-N.C.) that limits states' power to veto the selection of a permanent disposal site within their borders.

The bill directs the Department of Energy to study potential locations for a permanent nuclear waste site and submit the three best candidates to the President by early 1985, at which time the President will choose one site. According to the Associated Press, the bill would not cover disposal of military nuclear wastes, which make up 90 percent of the nation's total.

Under the bill's original wording, both houses of Congress would have to vote to override a state's veto of its selection as the dump site. But the Broyhill amendment shifts the burden of proof to the states, requiring the selected state to convince one house to sustain its veto.

The amendment was voted on twice, the second time immediately preceding House consideration of the entire bill. On the second vote, representatives from the northern Rocky Mountain states voting in favor of the amendment were Idaho's Larry Craig (R); Hank Brown (R) and Ken Kramer (R) of Colorado; and Dick Cheney (R) of Wyoming. Opposing the amendment were Ron Marlenee (R) and Pat Williams (D) of Montana; Tim Wirth (D), Pat Schroeder (D), and Ray Kogovsek (D) of Colorado; and Dan Marriott (R) and James Hansen (R) of Utah. Idaho's George Hansen (R) did not vote.



Hanford nuclear waste solidification facility

Dorian Shaw, legislative assistant for Dan Marriott, said the congressman opposed the amendment because "he is against anything that would lessen states' rights." Shaw said that Marriott would like to see the veto restored to its original form. Utah's Paradox Basin, near Canyonlands National Park, is one of the sites being considered for the nation's nuclear waste dump (HCN, 2/5/82).

Dick Cheney voted for the amendment because he regarded it as a reasonable compromise between the two-house override and no states' rights at all, according to chief legislative assistant Patty Howe. Cheney felt that states would have adequate input throughout the site selection process, Howe said.

"The Broyhill amendment doesn't affect Montana's 1980 initiative prohibiting disposal of nuclear wastes in the state at all," said Gray Garwood of Pat Williams' office in Washington, D.C. According to Garwood, the real threat

to Montana, and to the six other states that have nuclear bans, is an amendment sponsored by Sen. James McClure (R-Idaho), to the Senate's version of the Nuclear Waste Bill. The Senate passed its bill last spring.

The McClure amendment states that, with the passage of the Nuclear Waste Bill, the problem of nuclear waste disposal would be officially solved. Garwood said the amendment was aimed specifically at states like Montana that have banned nuclear activity until such time as the waste problem is taken care of.

A House-Senate conference committee is now attempting to iron out the differences between the House and Senate bills before the lame duck session ends on December 17. If Congress doesn't make the deadline, efforts to put together a Nuclear Waste Bill will have to start from scratch in the next legislative session.

— Jeff Stern

Rate hike for solar users

Utah Power and Light Company has proposed a 54-percent rate increase for customers who use solar energy. The utility had given solar customers a discount but now wants to raise their rates to reflect the actual costs of serving them. The proposal prompted charges, which company officials have denied, that Utah Power is anti-conservation. The Utah Division of Public Utilities has recommended that solar users be saddled with only a 17 percent rate increase at the present time.



Anne Gorsuch

Gorsuch in contempt

Environmental Protection Agency Administrator Anne Gorsuch was cited for contempt of Congress for withholding documents concerning EPA's Superfund program from a House subcommittee. Acting on orders from President Reagan, Gorsuch refused to release 23 of the 787,000 documents requested by the public works investigations subcommittee, saying that to do so would jeopardize EPA's case against certain chemical dumps. The subcommittee is investigating EPA's management of the \$1.6 billion superfund. If the contempt citation is approved by the full Public Works Committee, the full House will consider what action to take against Gorsuch.

Idaho wilds whittled

Idaho conservation groups have challenged the U.S. Forest Service's wilderness study of the Sawtooth National Forest in Idaho. The Idaho Conservation League said the Forest Service's recommendation of 283,750 acres of wilderness was inadequate, and instead proposed a 420,000-acre wilderness area in the White Clouds-Boulder Mountains area of the Sawtooth Forest. The ICL said the Forest Service excluded many potential wilderness areas from its study in 1978. They are asking for equal consideration of their proposal along with the other six alternatives in the Forest Service study.

No driving in smog

The Colorado Air Quality Control Commission has endorsed the use of mandatory "no-drive days" for the Denver area when pollution levels exceed federal standards. The Commission's previous plan, which did not include mandatory no-drive days, was rejected by Environmental Protection Agency Regional Administrator Steve Durham (HCN, 10/29/82). Durham felt the original plan would not meet compliance standards. The state would face sanctions worth millions of dollars in highway and sewer funds if standards are not met. The new mandatory no-drive day proposal would go into effect only when voluntary no-drive days would not bring the area's pollution down to acceptable levels.

Arsenic and water mixing in Montana

Thirty-three homes and one bar in Milltown, Montana, have been without a safe water supply for over a year because their wells are contaminated with high levels of arsenic. Residents, local and state officials are seeking funds to study and correct the problem in this town five miles east of Missoula.

The high levels of arsenic — four to five times the federal standard for arsenic in drinking water — were discovered during routine tests by the county health department and state Water Quality Bureau. Because the four Milltown wells serve enough residents to qualify as a public water supply, health officials were testing water samples as part of standard procedures. The water had not been tested before the 1981 test because the supply had been considered a private source, and no one can say how long it has been contaminated nor what past levels have been. There have been no reported health effects from the pollution.

The source of the arsenic is not known. However, a preliminary study indicates that the silt behind the nearby Milltown Dam on the Clark Fork River contains high levels of arsenic and heavy metals. For years the Clark Fork drainage has been a waterway for wastes from mining and smelting activities about 110 miles upriver in Butte and Anaconda. Some of the toxics have collected behind the dam. In the past, the dam's owner, the Montana Power Company, has periodically cleaned out the sediment by releasing water, but because of adverse effects on fish habitat, the maintenance technique is no longer practiced.

There is speculation that there is some kind of hydrologic interchange between the water behind the dam and the groundwater that supplies local wells. Jim Melstad of the Water Quality Bureau calls the toxic sediments "a suspicious source" of the arsenic contamination,

but not a documented one. Champion International, which operates a plywood mill not far from Milltown, has a chemical disposal site near the town and it too is considered a possible, but not likely, source of the water pollution, Mestad said.

Finding the pollution source may be easier than finding the money to do something about it. Since the contamination was discovered, residents have been seeking ways to finance an alternative, safe water source, but without success.

County officials have urged Gov. Ted Schwinden (D) to make the Milltown arsenic contamination the state's top priority for clean-up of toxic wastes. That designation would significantly enhance Montana's ability to obtain federal funds under the Environmental Protection Agency's Superfund program.

Superfund, a collection of revenue from taxes on the chemical industry, is used to clean up severe pollution problems at qualifying sites around the country. If Milltown is eligible for Superfund money, EPA would fund an investigation of the exact source of the arsenic problem and its effects on public health. If possible, it would also determine who is responsible for the pollution. If a responsible party is identified, EPA can give it the bill for the clean-up. Superfund money could also be used to provide Milltown residents with a safe water supply.

EPA has given the Milltown arsenic contamination problem a high ranking on its list of priorities for clean-up funds. A final decision from the agency's headquarters in Washington, D.C., is expected in late December.

— Ellen Ditzler

BARBED WIRE

It's a bird! It's a plane! It's... The Marvel Comics Group, chroniclers of the adventures of Spiderman, the Hulk and other luminaries, has prepared a comic book on the life of Pope John Paul II.

Practice makes perfect. The citizens of Burlington, Connecticut, who number about 180, recently traveled by car the 60 miles to Beckett, Massachusetts, the town designated by the federal government as the civil defense refuge for Burlington residents in case of nuclear war. The Burlington Organization for the Movement of Bodies to Safety (BOMBBS) was greeted by the Beckett League for the Assistance of the Scorched and Terrified (BLAST). Later there was a parade, softball games, a dance and a picnic, according to *East West Journal*.

As Jimmy Cliff said, "You can get it if you really want." A radio station in Arlington Heights, Illinois, is asking the Federal Communications Commission to approve the call letters WSEX. The FCC, which has approved, among others, the call letters WGAY, KFAT, KKKK and KINK for other broadcasters, has refused, saying the letters are not in "good taste."

Give the gift that stops giving before you give it. The Internal Revenue Service is telling taxpayers that, if they so choose, they can voluntarily include a little extra donation to help reduce the size of the national debt. The notice will be printed on the front of the instruction book for the 1040 tax form. The national debt now totals \$1.2 trillion. Your share comes to \$5,000.

HOTLINE

Synfuels for Utah

Paraho Development Corporation has secured two permits needed to go ahead with its proposed 12,000 barrel-a-day, multi-billion dollar oil shale project in Uintah County, Utah. The Utah Division of Environmental Health granted a feasibility approval order and the U.S. Mine Safety and Health Administration approved the company's mine training program. With these two permits in hand the company is hoping for part of the Synthetic Fuels Corporation pie. According to the *Denver Post*, Paraho is seeking \$1.28 billion in loan and price guarantees from the SFC. A Paraho official said the feasibility approval order is basically an "all clear" for the mining if SFC subsidies are obtained.

Grizzly skiing

The grizzly bears of northwestern Montana's Cabinet Mountains could lose some of their habitat to a proposed ski resort. The proposed location is Great Northern Mountain, 24 miles south of Libby, Montana and two miles east of the Cabinet Mountains Wilderness. The resort would be built in an area used by grizzlies for spring foraging. Great Northern Ski Corporation is studying the economic feasibility of the project and will decide next spring whether to begin an environmental impact statement or to scrap the project.



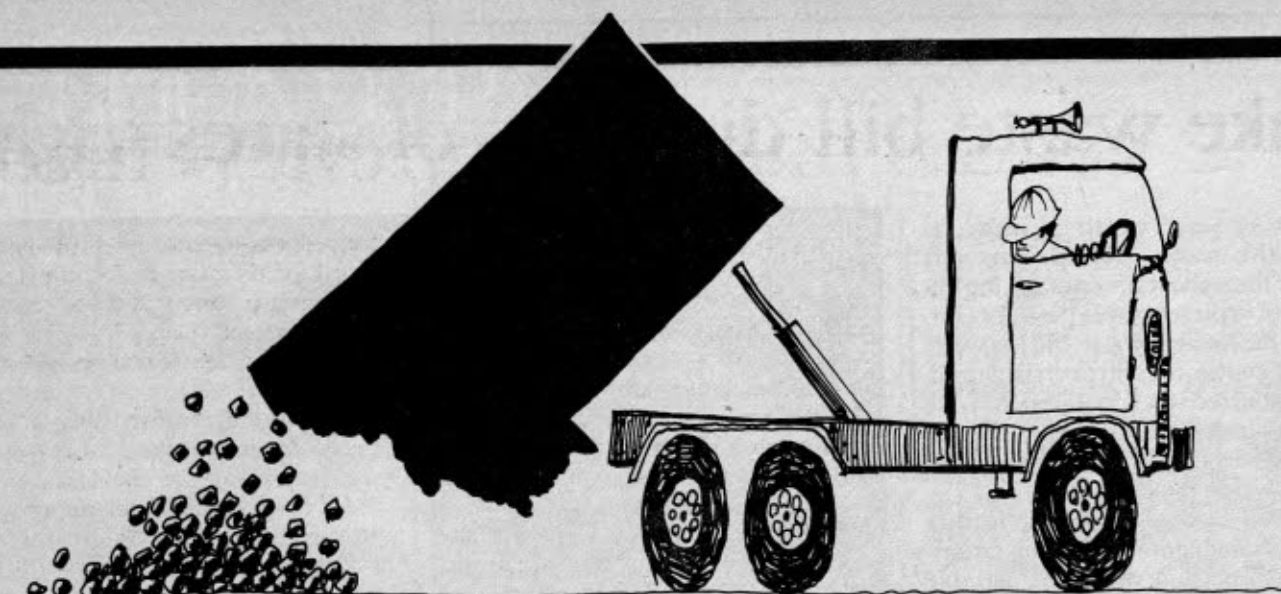
Souffer Productions Ltd

Salmon spawning down

The number of salmon migrating to spawning areas in the upper Flathead River in northwestern Montana declined drastically this fall. One possible reason for the decline is fluctuating water levels below the Hungry Horse Dam on the river. Salmon eggs deposited near the shore in high water are often exposed when the water level drops. Bald eagles on their way south from Canada usually congregate to feed on the migrating salmon, but this year's dearth of fish resulted in a decline in eagles counted along the river.

Governors take charge

Interior Secretary James Watt has bowed to Western governors, agreeing to give them a much greater voice in decisions affecting coal development on federal lands in their states. The governors had charged that Watt was not including them in such decisions and they had threatened to seek congressional aid if their concerns were not answered. After a recent meeting with the governors, the *Wall Street Journal* reported that Watt agreed to all the major changes they demanded in federal coal leasing regulations. Although the state officials were pleased with the outcome, they are still seeking more input into other mineral and water development decisions on federal lands within their states.



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Divvying up Montana's coal tax

Ever since Montana passed its 30 percent coal severance tax in 1975, the state's lawmakers have argued over how best to divvy up the increasing revenues provided by strip mining. In the 1982 election, Montana voters took the matter into their own hands and passed, by a whopping 71 percent, an initiative that requires the investment of new coal tax income in the state's economy.

Under provisions of Initiative 95, one-fourth of the annual tax will be invested in Montana-based economic ventures that employ Montanans and "maintain and improve a clean and healthful environment."

The initiative leaves to the state legislature the business of allocating economic development funds, which in 1983 should amount to more than \$28 million.

Initially the brain-child of State Rep. Dan Kemmis (D-Missoula) and Sen. Tom Towe (D-Billings), a nationally known expert in mineral severance taxation, I-95 ultimately received the backing of the state Democratic Party and Gov. Ted Schwinden, who is now working hard to control the way the funds are spent.

Environmentalists and some labor leaders wanted the initiative to include express prescriptions for the kinds of businesses that I-95 funds would stimulate. The Republican-controlled 1981 legislature made environmentalists especially leery about the possible definitions allowed under the "clean and healthful environment" banner. As one noted during the early I-95 debates, "Our legislature just might view a nifty

little state-funded synfuels plant as clean and healthful."

But Gov. Schwinden stepped in, promising his backing only if the initiative remained broad and vague.

Now Schwinden's newly organized Department of Commerce has put Development Bureau Director Nancy Leifer to work on allocation plans, and the Governor has appointed a 36-member Committee on Development Finance to advise the administration on legislative proposals. The new Committee includes bankers, businesspeople, legislators and leaders of labor and environmental organizations.

Meanwhile, opposition to the initiative has surfaced quietly within the Montana Bankers Association, which will challenge the new law as soon as it takes effect. The Bankers' attorneys charge that the new law appropriated funds through the initiative process — something that is forbidden under the state constitution.

The Bankers tried in October to have the initiative removed from the ballot, but the Montana Supreme Court rejected the case, stating that the appropriate time to challenge the constitutionality of a new law is after, not before, enactment. The Bankers' representatives refused public debate during the campaign, preferring to work quietly through the courts.

While the Bankers continue grumbling, members of the Montana Alliance for Progressive Policy, a Helena-based coalition of labor, environmental, agricultural, women's and education organizations, are putting together their own plan for allotment of the funds.

Working with development economist Ken Peres of Missoula, the Alliance appears to favor the establishment of community development corporations based in Montana's population centers. The corporations would receive portions of I-95 funds to spend on the development of local economic resources.

Environmental leaders within the Alliance remain fearful that the broad wording of the initiative will allow for virtually any use of coal tax funds, thus subverting the original purpose of the initiative — to extract a toll from the development of a non-renewable resource so that a renewable economy might be stimulated.

So far, very few specific proposals have been advanced by anyone. When the legislature meets in January, it will be met by a throng of I-95 supporters pushing favorite projects.

The initiative has already had an enormous political effect. I-95 clearly helped the Democrats regain control of the Montana House, and the new majority promptly elected Dan Kemmis as the Speaker. That alone will brighten the 1983 session for Montana's conservationists.

The implementation of I-95 will also produce the first major showdown between Schwinden and the new Montana Alliance. What happens between now and early January will be a test of how well Schwinden can accommodate the desires of Montana's progressive constituencies. That test may eventually bear on who occupies the statehouse in 1985.

— Don Snow

Utilities charge BPA with seduction

Eleven Washington utilities have added another legal challenge to the continuing saga of the Washington Public Power Supply System by charging that the Bonneville Power Administration "coerced" them into backing construction of two terminated nuclear power plants.

The "seduction-suit" claims the BPA forced the utilities to sign contracts for WPPSS nuclear plants 4 and 5 through a series of maneuverings that the utilities said left them with little choice but to sign.

The suit, filed in the U.S. Claims Court in Washington, D.C., said the BPA signed contracts between 1965 and 1976 to serve the power needs of non-preference direct-service industrial customers in the Northwest. Those customers are primarily aluminum companies.

The utilities said the BPA entered those agreements without making any provisions for them. The utilities are considered preference customers of the BPA.

In 1976, the BPA notified the utilities that it would not be able to meet their needs in future years and "virtually

demanding that the public utilities would have to become participants in and obtain a share of the output of two nuclear generation projects known as Washington Nuclear Plants 4 and 5...". Together, the 11 utilities participating in the suit own 33 percent of the two projects.

If they win, the utilities will be relieved of their share of the debt for the plants as well as legal costs. The total debt incurred by termination of the plants is \$7 billion.

The seduction suit is only the most recent of the WPPSS legal maneuverings. Early in November, a Eugene, Oregon judge ruled that 11 Oregon utilities were not obligated to pay their share of the \$7 billion debt because they did not seek voter approval prior to committing themselves to the plants. The Oregon utilities jointly owned an 8.3 percent share of the projects.

Lane County Circuit Judge George Woodrich ruled the utilities violated Oregon law when they signed the WPPSS contracts in 1976 without voter approval.

In a similar suit in Washington, King County Superior Judge H. Joseph Cole-

man delayed until January 10 the trial in a suit brought by Chemical Bank of New York against the 88 WPPSS members. The delay was granted to allow the utilities more time to prepare.

Chemical Bank is a bond trustee for the terminated plants and is attempting to force the utilities to repay the bonds outstanding for the projects.

Last month Coleman issued pre-trial rulings which said the Washington utilities had authority to sign the contracts with WPPSS and were obligated to pay their share of the debt, unless the court decided otherwise in later deliberations.

Another major suit on the same issue is pending in the Idaho Supreme Court.

Under their contracts with WPPSS, the 88 utilities must begin making payments to the supply system January 25, one year after the plants were terminated. WPPSS says it will run out of money for the termination program at plant 4 in early March unless the utilities begin making payments on schedule.

Without payment, WPPSS could find itself in default of the bond debt early next spring.

— John Soisson

Utah refuses nuke waste review funds

Utah Gov. Scott Matheson (D) has informed the Department of Energy that as of December 31, Utah will no longer seek DOE funding to finance state review of the department's nuclear waste repository work in southeastern Utah.

The state, a candidate for the nation's first high-level nuclear waste dump at a site adjacent to Canyonlands National Park, is currently the recipient of DOE funds made available to repository candidate states for the purpose of monitoring and reviewing DOE site investigation and location activities. Utah officials estimate that the state is spending \$15,000 a month on its nuclear waste review effort.

In a strongly worded November 24 letter to newly appointed Energy Secretary Donald Hodel, Matheson made it clear that the state had received less than polite treatment by DOE officials and that as a result he was prepared to look to other sources to fund the state's review.

"Over the last year," the letter said, "the state of Utah has provided critical comment regarding the DOE's procedure for consultation with the state as well as various substantive and procedural aspects of the nuclear waste isolation project itself. Many of our comments deal with legal requirements which in our opinion are being circumvented by the DOE in its effort to meet self-imposed deadlines."

The governor further told Hodel, "As we have increasingly disagreed with the

substantive and procedural aspects of the waste disposal program, the DOE has made it substantially more difficult to obtain funding for monitor and review purposes. Furthermore, DOE has intimated that unless we 'cooperate' the grant monies will be terminated."

The letter said it was the governor's position "that cooperation should not be defined as agreement and approval by the state of the DOE program," and concluded by saying "We simply feel that in order to maintain our autonomy and objectivity, we can no longer rely on the DOE as a source for funding."

The reason behind Matheson's abrupt decision to sever financial ties with DOE at this juncture was that someone at the agency tried to pull those celebrated federal purse strings in the wrong place.

Apparently a mid-level bureaucrat in DOE's Nuclear Waste Terminal Storage Program Office in Columbus, Ohio, was complaining in a recent phone conversation with a senior Matheson aide that certain state officials had been too critical of DOE's siting activities. The DOE official complained that by funding the state's review effort he was, in part, "funding the opposition." He reportedly intimated that if the state did not tone down this criticism the grant monies could quickly dry up.

The Matheson aide, outraged by the attempted arm-twisting, immediately recommended that the state discontinue its financial arrangement with DOE. The aide said that such high-

handedness on the part of the feds called for the state to "engage in guerrilla warfare," and that it was time for a "retreat to the bushes."

Matheson has not yet opposed or supported a disposal site in Utah. Rather, he has repeatedly insisted that an open, public decision-making process for siting a repository be established to produce complete information upon which to make a site selection decision.

The recent arm-twisting incident afforded Matheson the opportunity to make clear to Hodel that DOE's state consultation effort in Utah has been lousy. Matheson's letter alerted Hodel to the presently contentious state of affairs between DOE and the state, encouraged him to be skeptical about what he may hear inside DOE about Utah, and created the opportunity for the new secretary to set a new course in dealing with the state.

The door is now open for Hodel to correct the situation and to do what former Energy Secretary James Edwards was unwilling to do — develop a comprehensive siting process that addresses the environmental and informational concerns raised by the state of Utah and that provides the state with a meaningful role in the decision-making. Matheson, despite current congressional intentions to reduce the role of the states in nuclear waste repository siting decisions, will likely not settle for anything less.

— Brec Cooke

HOTLINE

Hampshire folds

The Hampshire Energy Company announced late Wednesday, December 8, that it has cancelled its plans to build a synthetic fuels plant near Gillette, Wyoming. That project, the last coal conversion project left in the running for loan guarantees from the U.S. Synthetic Fuels Corporation, had been approved by the Wyoming Industrial Siting Council and was steadily moving toward a construction start in April. Despite the prospect of federal support, the Hampshire project was plagued by financial difficulties that finally killed it. After Standard Oil of Ohio pulled out of the project in October, the remaining partners were "unable to attract additional equity partners needed to construct the plant," according to a Hampshire spokesman. To be viable, Hampshire's gasoline would have had to sell for about \$3 per gallon for the next 10 years, a Hampshire board member said.



Unemployment reclamation

Rep. Morris Udall (D-Ariz.) presented President Ronald Reagan with a plan to put about 40,000 unemployed coal miners back to work and improve the environment at the same time. He suggested that a quick-start mined-land reclamation program be put into effect, hiring the unemployed miners to do the reclaiming. Udall said that \$150 million of the \$640 million abandoned mine reclamation fund could be used to fund his quick-start program, according to United Press International.

Idaho coal plant planned

Plans are being made for what could be the first coal-burning power plant built in Idaho in decades. The 20-megawatt facility would generate steam for the J.R. Simplot Company's potato processing plant in Aberdeen, replacing the company's natural gas boiler. A Simplot official said the coal plant could cut the company's yearly gas bill in half. Under Idaho's co-generation program, Idaho Power Company would purchase excess electricity from the coal-fired facility.

Payette reprieve

Reduced demand for energy in the Northwest has forced Idaho Power Company to postpone its proposed energy project on the North Fork of the Payette River north of Boise, Idaho. If built, the project would require diverting 15 miles of the river through tunnels to spin underground generators. Idaho Power proposed the project in the late 1970s when projections showed demand outstripping supplies within 10 years. However, last year's annual load growth, projected to be 2.7 percent, was only 1.9 percent.

Front range cities fight for water

William Henry Jackson snapped the first photograph of 14,003 foot Mount of the Holy Cross for the Hayden Survey in 1873. The 126,000 acre wilderness area that surrounds the Colorado peak is now the site of an intensifying battle over the use of high country water.

Two fast-growing front range cities, Colorado Springs and Aurora, acquired water rights to the upper Eagle River tributaries, including Homestake Creek and Cross Creek, in 1962. In 1967 the cities completed phase one of the Homestake Project. Homestake Reservoir, located southwest of Vail, and its accompanying series of diversions and tunnels send western water to the eastern slope of the Rockies.

Homestake II would permit four diversions within the Holy Cross Wilderness Area, and by means of underground tunnels, collect approximately 90 percent of the spring runoff of the Cross and Fall Creek watersheds.

Costing around \$91 million, Homestake II could provide 19,600 acre-feet of water per year for Colorado Springs and Aurora. The cities say they will need Homestake II by 1994. Because they feel they have done a good job mitigating potential environmental damage in the area, and because they are faced with a five to seven year construction schedule, the cities are eager to begin.

The U.S. Forest Service issued a draft environmental impact statement on Homestake II in May, 1982. During a November 12 hearing before a U.S. House public lands subcommittee, William Robinson, Forest Service project leader, acknowledged that the proposal would adversely affect the wilderness values of Holy Cross. "All that can be said is that the proposed project is relatively small — about 13 acres on a 126,000 acre wilderness. The physical disturbances to surface resources are limited and short-lived," he said.

Opponents said that the 13 acres destined to experience the most damage are not located on the fringe of the wilderness, but are in the heart of the area. They have also disputed the Forest Service's findings concerning potential



Mount of the Holy Cross

impacts on downstream wetlands. Two independent hydrological studies commissioned by the Holy Cross Wilderness Defense Fund, charged that 240 acres of wetlands, including fisheries habitat and several waterfalls, would be altered. However, government officials said that they now routinely ask for retention of minimum stream flows below diversion points.

Three alternate diversion plans involve more surface disturbances,

including, in one proposal, construction of a 100,000 acre-foot storage reservoir outside the wilderness.

A water rights trade involving Aurora, Colorado Springs and Denver has suggested yet another alternative. A complicated arrangement, the trade requires construction of a new reservoir on either the Eagle or Colorado rivers and necessitates juggling existing water supplies between Green Mountain and Dillon Reservoirs using a pumped-back pipeline system. Promoted by Vail Valley Consolidated Water District, this alternative would eliminate the need for Homestake II and also for Denver's large East Gore and Eagle Piney water projects.

The alternative most favored by the Holy Cross Wilderness Defense Fund is a no-action proposal. The group feels that even though Homestake II was granted an exemption in the Colorado Wilderness Act of 1980, construction would be against the intention of the act. "There has never been a major exemption acted upon and if Homestake II passes, a whole rash of others may pass on its precedent," said spokesman Jeff Rennie.

Rep. Ray Kogovsek (D-Colo.) originally favored Homestake II, but now opposes transmountain diversions. Since redistricting, his constituents no longer include Colorado Springs, but are from the Western Slope. As a member of the House subcommittee on public lands, Kogovsek along with chairman John Seiberling (D-Ohio), wants the exact intent of the wilderness act exemption cleared up. In testimony before the committee, Robinson said the Forest Service believes that "Congress did not require the project to be built in the wilderness, but if it is, the effects on wilderness values should be minimized."

The Forest Service will decide in January whether to re-issue or supplement the current EIS or whether to make a different statement and permit the project to move forward.

— Deidre Duncan

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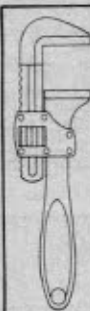
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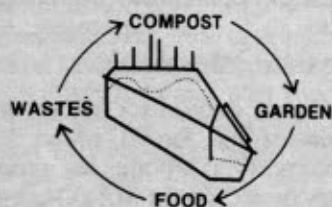
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Why is this woman smiling?

Associate editor Carol Jones, ever a cheerful soul, has had extra reasons for smiling lately.

For starters, she's just completed her farrier training (that's horse-shoeing, for you urban readers) and she can now return most of her attention to her first love, environmental reporting for *High Country News*.

Better still, her prospects of being paid regularly for that labor of love have improved dramatically, thanks to the good early returns on our annual Research Fund drive.

The total now stands at \$8,268 and our second mailing has just gone out. Our thanks this issue go to the following Research Fund contributors:

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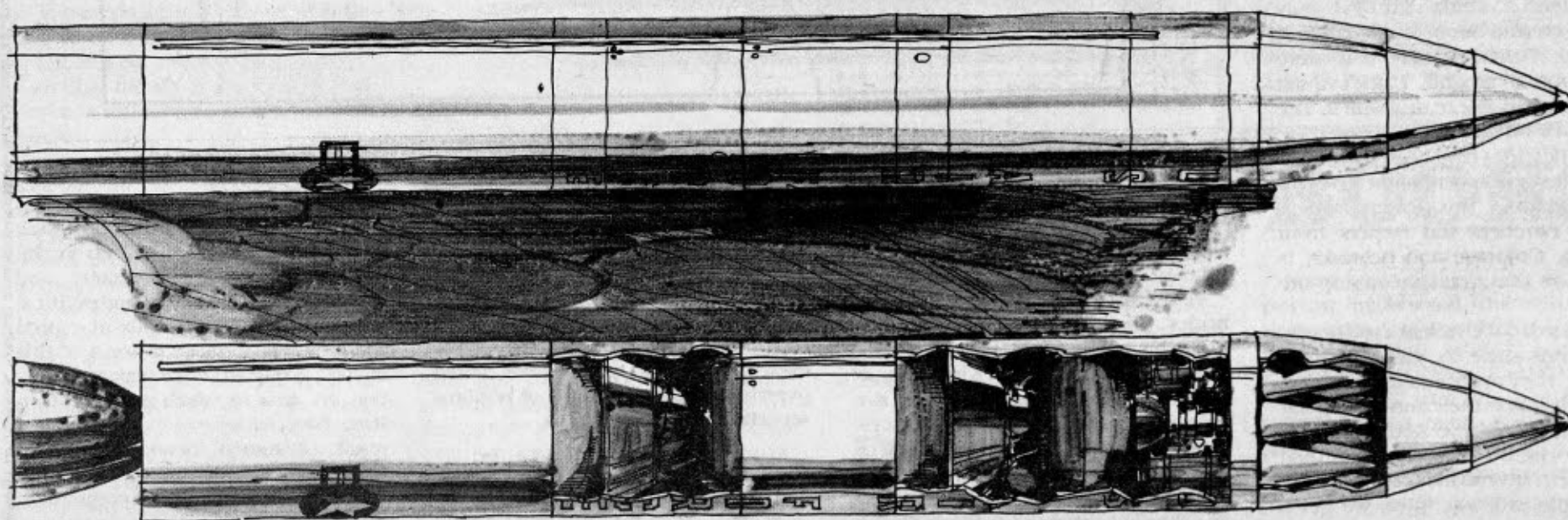
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ALL MIXED UP IN CHEYENNE

BY DAN WHIPPLE

USAF



The MX missile is a "Peace-keeper" because it "insures that the Soviets gain no advantage from initiating an attack."

Or, the MX is a "warmaker" because "it is a new system that no longer just gives the United States the ability to respond to a Soviet attack, but to try to fight a nuclear war and win it. In polite company, you can't say we need war-fighting weapons, so they talk instead about the 'window of vulnerability'."

These are the opinions of the U.S. Air Force and the private, non-profit Center for Defense Information, respectively. With President Reagan's announcement two weeks ago that he wanted to deploy 100 MX missiles in hardened silos in the ranching country of southeast Wyoming, little Cheyenne (pop. 47,000) has become the center of the most important nuclear weapons debate of this decade and perhaps of the century.

When you turn off Interstate 80 onto East Lincolnway in Cheyenne, you drive past the Little America motel and truck stop ("Most Credit Cards") and the fancier Hitching Post motel, where most of the state legislators live during the yearly sessions. If you turn left at the second stoplight past them, you enter Missile Drive, which takes you to the gates of F.E. Warren Air Force Base.

As the name of the road implies, Warren is already the command center for a large portion of the current U.S. nuclear arsenal. Cheyenne has been living with the most powerful weapons known to man since 1958 and local residents have developed a pronounced indifference to the destructive potential in their midst. Warren monitors 200 of the approximately 1,000 existing Minuteman III intercontinental ballistic missile installations — 87 in nearby Nebraska, 55 in Colorado and 48 in southeastern Wyoming. Warren is one Cheyenne's major employers and is universally considered a "good neighbor."

Under the president's proposal, Warren would be the command center for all 100 MX missiles, arrayed in what the Air Force calls "Closely Spaced Bas-

The basic paradox of nuclear weapons is that they are too powerful to be used. But if this is so, they lose all their strategic and diplomatic value, so we have to keep threatening to use them.

ing" and what nearly everyone else calls "dense pack." Critics call it "dunce pack." Dense pack is either the 31st, 32nd, 33rd or 34th basing mode proposed for MX. No one seems to be terribly certain.

Dense pack — like all of the other proposed and rejected basing modes — is an attempt to make certain that U.S. land-based strategic nuclear weapons can survive a first assault by Soviet missiles. The concept has essentially two components — incoming missile fratricide and superhardened silos.

The missiles would be put in silos about 170 feet below the surface of the ground. They would be arranged on a plot of land measuring one to one-and-a-half miles wide and 20 miles long. The 20 to 25 square mile area would be arranged in a north-south direction. This will be done because any Soviet attack is expected to come over the North Pole and this arrangement would present a narrower target for Soviet missiles.

One line of defense for the missiles is the super-hardened silos. According to Air Force Captain Patrick Mullaney, director of public affairs for the Ballistic Missile Office, "The silos encapsulate

concrete in strongly confined steel. In the past, 45,000 to 50,000 pounds of pressure per square inch would destroy concrete. However, with the steel, the concrete silos have survived the tests." The Air Force has run tests on scale models of the silos with the equivalent of a 25 megaton warhead — the size believed to be the most likely used by the Soviets against the MX. Mullaney said the scale model survived the test.

The second line of defense is "missile fratricide." This is the theory that, if the Soviets launch a large number of missiles at the MX dense pack, some will explode earlier than others, destroying those behind them and decreasing the effectiveness of the attack. Mullaney said, "Fratricide is well understood. That is really not in doubt. There are some very simplistic arguments against it. We're very confident that a large percentage of the system will be survivable." Exactly how many of the missiles the Air Force estimates will survive is classified information.

However, since no one anywhere has ever been involved in a massive nuclear attack, the question of whether fratricide will happen is highly debatable, despite the Air Force's certainty. Stan

Norris, a research analyst for the Center for Defense Information said, "Even the administration concedes that sooner or later dense pack will be defeated by the Soviets. Then an anti-ballistic missile system (ABM) will be needed." An ABM system is one which intercepts and destroys incoming missiles before they reach their target. Under the SALT I treaty, both the U.S. and U.S.S.R. are limited to one ABM site each.

And, according to Dr. Richard Garwin, an independent arms expert and consultant to IBM, "Packing the MXs closely together virtually assures that they will be rendered inoperable by the electromagnetic pulse that would be created by the detonation of an incoming weapon." Electromagnetic pulse is an only-recently understood effect of a nuclear weapon's explosion. In a high-altitude detonation, it can knock out electrical equipment over a wide area by sending a powerful surge of electricity through conductive materials. According to Jonathan Schell in *The Fate of the Earth*, "A multi-kiloton nuclear weapon detonated 125 miles over Omaha, Nebraska, could generate an electromagnetic pulse strong enough to damage solid-state electrical circuits throughout the entire continental United States and in parts of Canada and Mexico." A kiloton is the equivalent of 1,000 tons of TNT. A megaton is the equivalent of one million tons of TNT. Most U.S. weapons are between .335 and one megaton in destructive power. Soviet weapons are larger in their destructive power, which is usually called "throw weight."

Other potential methods of overcoming the dense pack, critics say, are timing devices that set off the incoming warheads simultaneously and sequential launching of missiles so that the next one in line doesn't hit the target until the explosive force of the preceding one has dissipated.

Each MX missile will be equipped with 10 nuclear warheads. These will have a throw weight of between .335

(continued on next page)

(continued from previous page)

and .5 megatons each. They will be multiple, independently targetable re-entry vehicles, or MIRVs. This means that each of the 10 warheads can be targeted for a different site. Thus, the 100-missile MX system theoretically would be able to hit 1,000 different targets in the Soviet Union. The chief strategic advantage beyond the increased "payload" is the better accuracy promised by the missile. Currently, both U.S. and Soviet missiles can hit within an average of .2 miles of the target. The MX would improve that average to .05 miles.

The Minuteman III missile, which the MX will complement, currently carries three .335 megaton warheads. Linda and Alan Kirkbride have three Minuteman missile silos on their ranch northeast of Cheyenne in Meriden, Wyoming. The sites are unimpressive, even close up. They are fenced areas of about an acre and a half with a lot of concrete and some antennas. Linda said, "I've only seen the missile out of its silo once. It was huge. Psychologically, if it were located above ground, I don't think we'd have been able to deal with it. The fact that it's buried makes it easier."

The Kirkbrides have been instrumental in the establishment of the Tri-State MX Coalition. This group, which includes ranchers and farmers from Wyoming, Colorado and Nebraska, is working on the local level to stop the MX.

Linda said, "We've had the Minuteman III silos since the early 1960s. At the time, they were mostly accepted. People felt it was their duty to help out in the national defense. And, at the time, the Air Force built the roads and then turned them over to the county to maintain. People still say, 'Well, we got a great road system out of it.'"

"But the MX is different. The first thing that bothered us is the great amount of land it's going to take up. It is going to affect every rancher around here, whether they put it on their land or not. There is going to be land out of use, increased traffic and several other problems.

"In addition, there's a qualitative difference between the MX and the Minuteman III. There are 10 warheads as opposed to three. It is an offensive weapon as opposed to a defensive one.

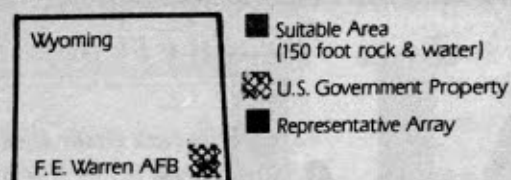
WHAT'S IN A NAME?

President Ronald Reagan ought to have his poetic license revoked for dubbing the MX the "Peacekeeper." For 40 years, weapons nomenclature has had a belligerent tinge and the president is flying in the face of this tradition for a few public relations points. The weapon that destroyed Nagasaki in 1945 was called Fat Man and the big stick approach to naming weapons has been prevalent ever since.

Most weapons are given one name during their development stages and another after they are approved and under construction. So, it is not unusual that Reagan would give the MX a new name. However, the Peacekeeper is going to sound tame indeed compared to such existing weapons as the Sidewinder, Minuteman and Atlas or the French Pluton and Hades.

The new moniker doesn't seem to be catching on, though. Even Air Force public relations people are still calling it the MX.

— DSW



Deployment Site

"Traditional values are part of it, too. My husband's family is a fourth generation ranch family. We want to be ranchers. We want to be able to continue to do what we've been doing."

Pete Hansen is a neighbor of the Kirkbrides. He lives alone in the ranch house his grandfather built in 1896. He jokingly referred to the Kirkbrides as the "new folks" because he, too, is a fourth generation rancher whose ancestors settled in the area in 1890, a year or two before the Kirkbrides. He demonstrated some of the "traditional values" in action as he stopped gathering cattle to pull the car of a visiting reporter out of a snow bank. While hooking the tow chain to his truck he said, "That MX is going to mess up everyone around here. I'm one of the smallest ranches in the area and if they take any of my land, it could mean the end of my ranch." Hansen said that nearly all of the ranchers in the area are opposed to the MX. However, one rancher, Paul Etchepare of the Warren Livestock Company, the area's largest ranch, has offered to lease his land to the Air Force as a site for the MX.

Aside from the question of the land to be used, water may be a problem for the missile. According to Capt. Mullaney, the project will use 45,200 acre-feet of water over a six-year period. However, there is presently no unappropriated surface water in Laramie County and there is a moratorium on drilling any new wells to tap the groundwater. Mullaney said that it is Air Force policy to comply with all local water laws. He said, "We will purchase or lease existing water rights to get the water we need." The peak year demand will be about 11,000 acre-feet at the height of construction in 1987. These water demand figures include the amount necessary for construction needs and domestic water consumption by the increased population.

Some activists, including the Wyoming Outdoor Council, a state-wide environmental group, will probably try to make sure that the MX project comes under the jurisdiction of the Wyoming Industrial Siting Council. The ISC was established in 1974 to help communities cope with the boom impacts of large industrial projects. These projects have been mostly energy-related, but the impact mitigation for a large military installation would not be a great deal different from any other large project.

However, the act establishing the ISC specifically excludes defense projects from ISC jurisdiction. The Air Force's Mullaney said, however, "We will cooperate with all state laws. We are not bound by ISC regulation, but it has been

the policy to comply with state rules. We are moving into the community to live there, and it is our intention to comply with state law."

There may be a move in this session of the state legislature to amend the Industrial Siting Act to bring the project into state jurisdiction. Even if it passes, however, the federal government could override it on the grounds of national security if it chose to do so.

While the ranching community is heavily opposed to the MX, the reaction downtown in Cheyenne is decidedly mixed. The MX is expected to cost \$26.4 billion

— \$10.6 billion for research and development, \$13.0 billion for procurement and \$2.8 billion for construction. Much of the latter cash will end up in the Cheyenne business community and many of the local business and political leaders welcome the influx of capital and jobs. The primary concern of this interest group has been impact mitigation, an area in which many western states have substantial experience as a result of energy development. The Cheyenne-Laramie County Regional Planning Office prepared a preliminary issue paper outlining the potential impact from the MX development.

The construction force will present

The

The following glossary is an explanation of many of the terms used in the debate over the MX missile and the nuclear stance of the United States.

ABM

Anti-ballistic missile. A defensive missile system designed to destroy attacking intercontinental ballistic missiles. The ABM missiles could be armed with either nuclear or non-nuclear warheads.

Atomic bomb

A weapon utilizing fission energy. Fission occurs when a neutron splits an atom into smaller pieces.

Ballistic missile

A missile that, after a period of powered flight, moves on a free-falling trajectory under the force of gravity. Ballistic missiles have a range of up to about 6,000 miles.

CEP

Circular error probable. This is the measure of missile accuracy. It is the radius of a circle around a target within which 50 percent of the missile warheads will land. The smaller the CEP, the more likely it is that an enemy warhead will damage a hard target, such as a missile silo.

Counterforce

The use of strategic weaponry to destroy enemy missiles, bombers and other military forces.

Deployment

The distribution of weapons for use in combat.

EMP

Electromagnetic pulse. One effect of a nuclear explosion, not well understood, which is capable of destroying electronic circuitry.

First strike

An initial attack with nuclear weapons.

First use

The policy of using nuclear weapons to meet a conventional Soviet attack. The U.S. has not ruled out a first use of nuclear weapons, for instance, in the event of a Soviet conventional assault on Europe.

Fratricide

The situation in which an exploding incoming nuclear warhead destroys those coming in behind it.

the greatest immediate problem for the community. About 6,100 new workers are expected to be drawn to the community. Planners expect that this would result in an overall population increase of about 30,000, considering those workers would probably bring their families and would require additional support services, bringing in more workers. This represents an increase of about 50 percent in the county population. It is almost certain to strain housing facilities, social services, law enforcement and other services. However, the total new permanent population living in the county after construction would be about 10,000 based on a work force of 2,200 — 1,500 air force personnel and 700 private sector employees.

The Chamber of Commerce has formed a committee to deal with the MX construction. Douglas Reeves, an investment broker and member of the committee, said, "We are taking a very low-key approach, trying to minimize the impact on the city. The productive thing to do is to try to avoid negative impact. It is not a very helpful response to say that the MX is immoral or that Cheyenne will become ground zero for a nuclear attack."

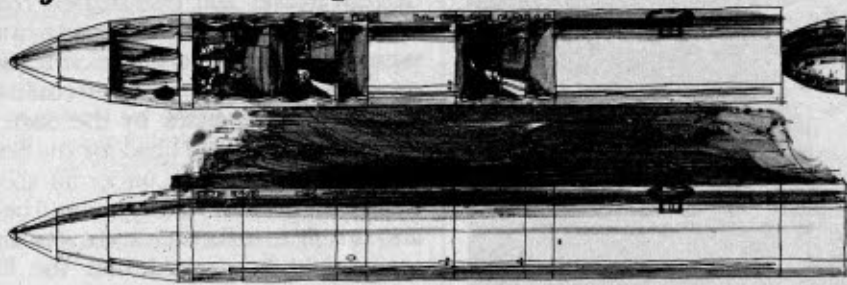
Ranchers in Laramie County, when asked why the Cheyenne populace is so supportive of the MX when it has been rejected by every other state in the Rockies, are likely to smile knowingly, rub thumb and first two fingers together and say, "Greed." Reeves, however, disagreed with that assessment of motive. "There aren't many fast bucks to be made here. The MX will just mean a lightening of the recession. The work force won't be here long enough to justify any major new housing projects, for instance. I won't be advising my clients to build any major projects."

"We're trying to provide some input and help the government get the facts. We want to provide communication

One pro-MX Cheyenne man said, "If we ever have a nuclear war, I'd rather be at ground zero anyway."

One anti-MX activist said, "It's kind of hard to oppose the MX because the quality of life in Cheyenne will deteriorate. It can't get much worse."

The Jackson Hole News asked the question, "What is your understanding of the MX missile system?" Richard Murphy replied, "It is the result of precise mathematical projection. If Wyoming, Utah, Nevada and Colorado were destroyed in a limited nuclear conflict, the loss of voters would not affect the re-election of the incumbent president."



between the business community and the government."

On the other side are the anti-MX people, led by the Tri-State MX Coalition. The coordinator of the group is Sister Frances Russell, a Roman Catholic Sister of Charity. Russell blames complacency on the part of Wyoming's public officials for attracting the missile to the state. She said, "We have not had strong representation from our governor or our congressional delegation. Nevada and Utah probably were not a realistic possibility because they had already protested vigorously about the 'racetrack' basing mode (see accompanying story). Montana passed an initiative in opposition to the system. So, they chose us because our represen-

tatives had either been silent on the matter or openly favored it."

Tri-State has scored some early public relations victories. The Rocky Mountain Farmers Union passed resolutions in opposition to the MX and in favor of a nuclear weapons freeze with scarcely any debate. In addition, Cheyenne Diocesan Bishop Joseph Hart has issued a letter opposing the MX to all of Wyoming's Catholics, of which there are about 67,000.

Politically, the Wyoming delegation has generally rolled over and played dead in the MX debate. Sens. Malcolm Wallop and Alan Simpson and Rep. Dick Cheney, all Republicans, have supported the fund-

ing of the MX in Congress and have no overriding objections to basing it in Wyoming. None have lobbied for the missile's placement in the state, but they have taken a wait-and-see attitude.

On the state level, Gov. Ed Herschler (D) is willing to take the missile. The only state politician who seems willing to take the issue on so far is State Rep. Alvin Wiederspahn (D-Laramie County) who opposes the missile for a variety of reasons. Two resolutions have been pre-filed in the state legislature, one opposing the MX and one advocating a bilateral nuclear weapons freeze, but neither has much chance of passage.

Rodger McDaniel, Democratic candidate for U.S. Senate who lost to Wallop, is not sure there is much political future in opposition to the MX in Laramie County. He took a strong anti-MX stance during his campaign and he says now, "I'm convinced that my position hurt me in Laramie County."

One question that has been downplayed is whether the dense pack basing system is merely a stalking horse for a return to some sort of mobile, deceptive basing system like the abandoned racetrack scheme. This system, which

BOOKS

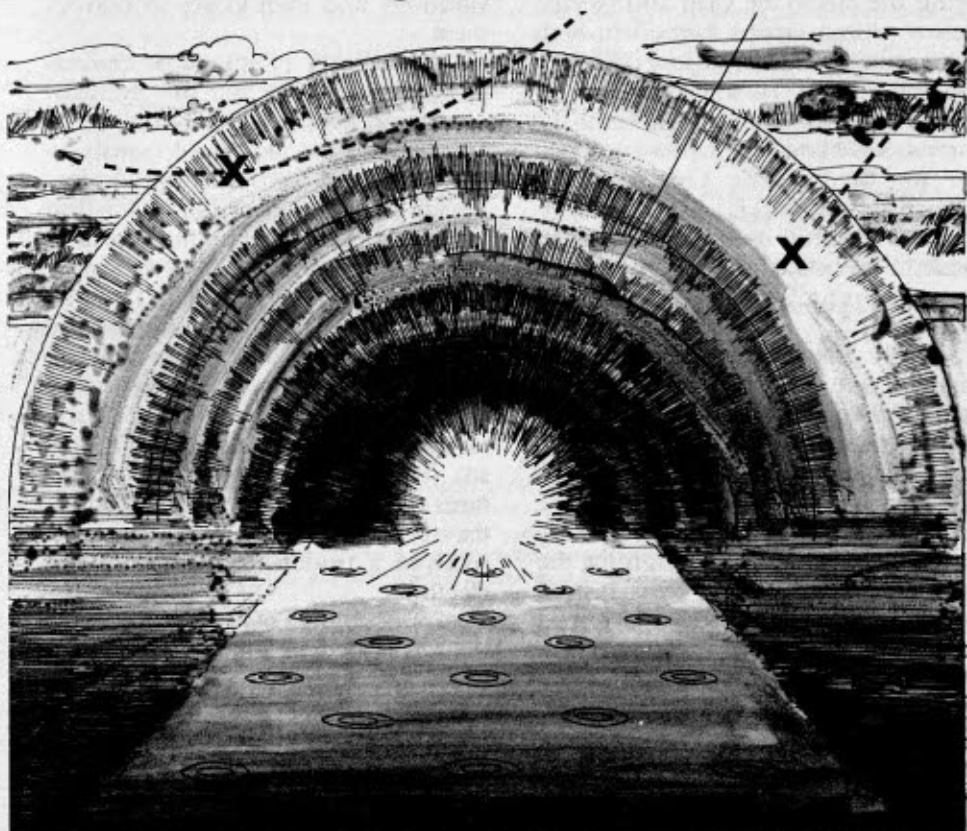
Some books that can help the layperson understand the national defense/nuclear war debate:

National Defense, by James Fallows; Random House.

What Kinds of Guns Are They Buying For Your Butter, by Sheila Tobias, Peter Goudinoff, Stefan Leader and Shelah Leader; Morrow.

The Fate of the Earth, by Jonathan Schell; Avon (paperback).

words of war



Fusion

This is a thermonuclear reaction in which light nuclei join together to form a heavier nucleus, which in turn releases vast amounts of energy. A hydrogen bomb is based on a fusion reaction.

Ground zero

The point on the surface of the earth at or directly below a nuclear explosion.

Hydrogen bomb

A thermonuclear weapon in which part of the explosive energy is obtained by fusion.

ICBM

Intercontinental ballistic missile. A ballistic missile capable of delivering warheads at ranges exceeding 3,000 miles.

Kiloton

A measure of explosive force equal to 1,000 tons of TNT. The bomb that destroyed Hiroshima was 12.5 kilotons.

Launch on warning

A policy of launching missiles and bombers as soon as a nation knows that an enemy attack has started, without waiting for missiles to land.

Launch under attack

Similar to launch on warning, but waiting a little longer to respond. Because of the high speeds that missiles travel, there is very little time between launch and hitting the targets. Both *launch on warning* and *launch under attack* avoid destruction of missiles but reliance on these policies could increase the dangers of accidental nuclear war.

MAD

Mutually assured destruction. A "balance of terror" condition in which each side possesses the capability to wipe out the other.

Megaton

A measure of nuclear weapons yield equal to one million tons of TNT.

MIRV

Multiple independently targetable re-entry vehicle. This is a system by which several warheads launched on one missile can each be aimed for separate targets.

Pre-emptive strike

An attack launched in anticipation of an attack by the enemy.

SALT II

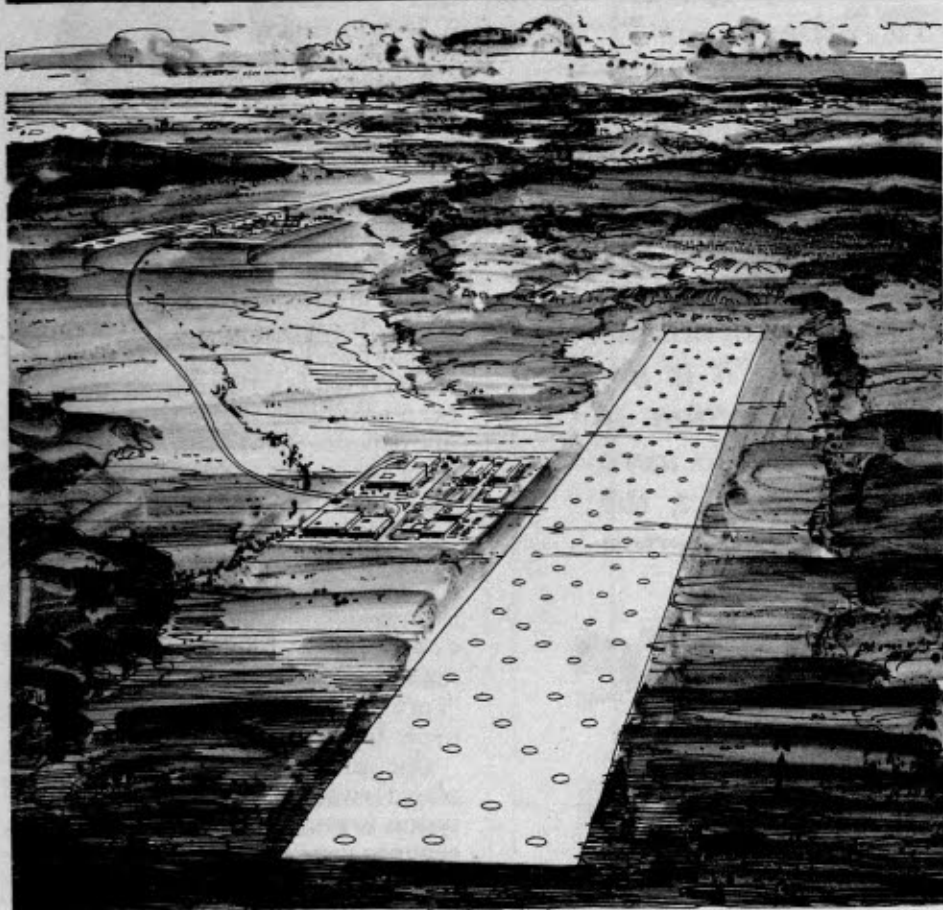
A treaty designed to last through 1985 that established temporary limits on ICBM launchers, ground- and sea-launched cruise missiles and aircraft carriers. The treaty was signed by both U.S. President Jimmy Carter and Soviet Chairman Leonid Brezhnev, but was never ratified by either the U.S. Senate or the Supreme Soviet. Both countries have abided by its provisions as a matter of national policy, however.

Strategic weapons

Weapons of long range, capable of destroying the infrastructure necessary to fight a war. For instance, strategic weapons would destroy munitions plants, factories and other economic resources.

Tactical weapons

Weapons of short range designed for use against military forces on the battlefield.



Artist's conception of dense pack

(continued from previous page)

would have used about 1,200 square miles of Utah and Nevada to shuttle the missiles from shelter to shelter, was the Air Force's preferred plan for protecting the MX from Soviet weapons.

Russell and a number of other opponents in Cheyenne believe that, since the Russians will eventually outwit the dense pack, the Air Force will need more land in which to hide the missiles. In a meeting with Pentagon brass, Simpson specifically asked this question and was assured that there were no plans to extend the dense pack system to any other basing mode.

Nevertheless, the fate of the funding for MX in Congress is questionable. The House Appropriations Committee, by a vote of 26 to 26, agreed to send the question to the House floor. This past year in the Senate, MX survived by only three votes and a number of votes have reportedly changed since then. Several strong defense advocates have questioned the need for MX.

Discussion of the environmental and socioeconomic impacts of MX basing seems to trivialize the issue. The question of environmental protection breaks down when you consider the tremendous power of these weapons. However, the deployment of the MX raises basic questions about the defense posture of the United States.

Deployment of the MX may violate the SALT II treaty, completed under the Carter administration. Although SALT II has never been ratified by the U.S. Senate, it has been official U.S. policy to abide by its terms. SALT II prohibits the building of any more fixed silos. MX is a four-stage "cold-launched" missile. Cold-launching is a technique for ejecting a missile from the silo using containerized gasses and then firing the engines

to prevent damage to the launch platform. The administration says the silos are not the launchers, the gas-filled containers are. This is the sort of hair-splitting of which diplomatic relations are made, but the Soviets have the same type of launch system on some of their missiles and the U.S. has contended that they are subject to the SALT II provisions.

The Center for Defense Information's Norris puts the defense dilemma this way: "At the basic level, there are two central questions. How much nuclear power is enough? And, enough for what?"

"In the traditional, classic definition of deterrence, 'enough' was having the capability to, and having the adversary know we are capable of inflicting unacceptable damage on his homeland. 'If this is the definition, we clearly have enough."

"However, in the last few administrations, starting with the Nixon years, this no longer appears to be the definition of deterrence. Systems are no longer designed to just give you the ability to respond, but to give counterforce capability."

"The assertion often made by the Reagan administration is that the Soviets believe that nuclear war can be fought, won and survived. Therefore, we need the same capability."

"Do we need the MX? To do what with? If you are talking about a war-fighting strategy, we do. If you are talking about deterrence, we don't."

"This brings us back to the basic paradox about nuclear weapons. They're too powerful to be used. But, if this is so, they lose all their strategic and diplomatic value, so we have to keep threatening to use them."

This article was paid for by the High Country News Research Fund and a grant from the Northern Lights Institute.

MX NIXED

At HCN press time, the U.S. House of Representatives voted by a surprisingly large 245-176 margin to delete \$1 billion from the defense budget for the production of the first five MX missiles. The bill does include, however, \$3 billion for MX research and development.

President Ronald Reagan said the House vote was a "grievous error" and immediately called upon the Senate to restore the construction funds. However, even though the Republicans hold

a 54 to 46 majority in the Senate, approval there is far from certain. Even if the Senate were to restore funding, it is unlikely that a House-Senate conference committee could reach an agreement on the issue.

So, MX funding is probably dead at least for the rest of this lame duck session. But the administration will undoubtedly put on a major push in 1983.

— DSW

Shellacking the shell game in the Great Basin

On Friday, September 7, 1979, President Jimmy Carter announced that the MX missile was coming to the Great Basin region of Utah and Nevada. In the then-current version of the dispersed shelter, or shell game, basing concept, the racetrack deployment scheme was considered the final solution to insuring the survivability of the controversial weapons system.

The deployment mode called for each of the 200 nuclear-tipped intercontinental ballistic missiles to be loaded onto 300-ton transports to be driven around 200 oval-shaped roadways. At the edge of these roadways were to be placed 4,600 concrete shelters from which the missiles could be launched. Upon attack by the Soviets, the transports would head for the nearest shelter. The Soviets, uncertain about which shelters the missiles would be in and unable to strike each and every shelter, would be assured that the U.S. would be able to retaliate.

Needless to say, the MX did not come to the Great Basin.

The racetrack deployment scheme proved to be only one more in a long line of unacceptable basing modes. President Reagan decided two years later to scrap the shell game plan. The intervening two years provide an instructive lesson in grassroots opposition and political courage by some of the elected officials and prominent institutions in the two states.

In the end, the MX was defeated in Utah and Nevada because of the extensive impacts that would have resulted from the basing concept. No weapons system ever proposed promised more changes in the land, environment and lives of the people than the mobile MX basing scheme. However, the technical deficiencies of the deployment scheme, the extensive impacts and the cost ultimately contributed to the defeat of the missile.

As soon as the decision was made to bring the MX to the Utah and Nevada desert citizen groups formed in both states, initially for the purpose of gathering information. These groups quickly became the backbone of the anti-MX forces. Steve Erickson, media coordinator for the Salt Lake City-based MX Information Coalition, said, "Enlightened self-interest overcame the initial fatalism associated with the federal government decision of this magnitude."

As the impacts became apparent, many people were willing to speak out against the project and they, in turn, swayed others, leading to what became a groundswell of opposition. Erickson said that while thousands opposed the shell game basing, there never were very many people actually fighting the MX battle on a day-to-day basis. Instead people wrote their letters and turned out to the town meetings when needed. In the end, a somewhat strange coalition of public officials, environmentalists, ranchers, miners, woolgrowers, Indians, clergy and just plain folks all reinforced the interests of each other.

A few events in early 1980 gave momentum to the opposition. The first of these was the publication in the Salt Lake City papers in January, 1980, of a topographical map of the deployment region with the missile locations included. From the map, people could see for the first time that "there would be a missile in nearly every valley from the Oquirrh Mountains (west of Salt Lake) to Fallon, Nevada (about 50 miles east of Reno)," Erickson said.

Early public opinion polls were running nearly 60 percent in favor of the missile system, with little opposition recorded and a large percentage undecided. By March of 1980, over 50 percent were opposed.

The second factor in developing public opinion was a series of town meetings held by Utah Gov. Scott Matheson (D) throughout the state in the spring of that year. These were intended to provide citizens with information about the local impacts of the missile and to hear their opinions about it. The meetings raised questions about water, land use, grazing, competition with energy development and a host of other issues. They also served to balance the Air Force public relations blitz then underway in the form of scoping meetings for the environmental impact statement that was to be prepared later that year.

Finally, in April of 1980, Bill Moyers, in nationally televised debates from the Symphony Hall in Salt Lake City, focused nationwide attention on the deployment scheme.

The first real political breakthrough for opponents of the MX came in June, 1980, when Matheson came out in opposition to the basing scheme. After substantial study, Matheson concluded that the basing scheme lacked credibility from a technical standpoint, would have extensive social and environmental impacts and, basically, was a bad idea.

In addition, the state was having trouble dealing with the Air Force. The Air Force and its contractors had refused state requests for information, frequently misled the state regarding their activities and generally ignored the state's comments on the proposal. Matheson came to the conclusion that many of the problems — e.g., manpower requirements and impacts on other state industries — were indeed unanswerable and that the proposal promised more problems than the state wished to deal with.

The state would later learn that the Air Force had not obtained the necessary permits for entry on state trust lands or for drilling test and observation water wells. It took several months to get the Air Force to admit these trespass violations and even longer to correct them.

The election of Ronald Reagan as president in 1980 and the eventual opposition of the Church of the Latter Day Saints also contributed heavily to the demise of the shell game basing. Reagan had campaigned in opposition to the proposal. Reagan, the Mormon Church and the opposition of the governors — Nevada Gov. Robert List (R) also later came out in opposition to the deployment in his state — lent credibility to the objections of the grassroots. It could no longer be perceived as the radical cause of a few dissenters. In Nevada, the issue generated enough signatures on petitions to have it placed on the 1980 election ballot, where it received a resounding "no" from the electorate.

In December of 1980, the LDS Church issued its Christmas message, which was highly critical of the world arms race. Then on May 5, 1981, church officials formally announced their opposition to the proposal. In Erickson's opinion, this was the straw that broke the camel's back. With the entry of the church into the debate, political opposition to the shell game basing was overwhelming in both Utah and Nevada, where the Mormon Church wields tremendous influence.

The grassroots work of letter-writing and public meetings along with the courageous position of the governors of both states and the Mormon Church made it possible to bring together a coalition of interests that eventually defeated the MX in the Great Basin. On October 2, 1982, President Ronald Reagan formally abandoned the shell game basing in Utah and Nevada.

— Brec Cooke

BULLETIN BOARD

LAST CHANCE FOR WASTE COMMENTS

Written comments on the revised Browning-Ferris Industries application for a hazardous waste treatment/disposal facility near Last Chance, Colo. are being accepted by the Colorado Department of Health. BFI's previous application was denied in June. The current application proposes reducing the facility's waste capacity. Comments should be sent by Dec. 13 to June Dreith, Waste Management Division, Colorado Department of Health, 4210 E. 11th Ave., Denver, Colo. 80220.

WATERED-DOWN REVISIONS

The Environmental Protection Agency will hold a public meeting Jan. 6, 1983 in Denver to discuss proposed revisions to its Water Quality Standards. The proposed revisions were published in the *Federal Register* on Oct. 29. The changes would give states more freedom to establish water quality standards based on local conditions. For more information, contact Criteria Branch (WH-585), U.S.E.P.A., 401 M St. S.W., Washington, D.C. 20460.

SLIP SLIDING AWAY

A book to help guide erosion and sediment control activities in urban areas is available from the North Cook County, Illinois, Soil and Water Conservation District. *Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control* covers design, construction and maintenance of erosion control practices. The book costs \$15 and may be ordered from North Cook County SWCD, 1675 Hicks Rd., Suite E, Rolling Meadows, Ill. 60008.

EDUCATING DECISION-MAKERS

"Resource Information for Conservation Decisions" will be the theme of the Soil Conservation Society of America's 38th annual meeting, scheduled for July 31-Aug. 3, 1983, in Hartford Conn. Speakers at the meeting will discuss methods of making information available to the people who make conservation decisions. Preliminary program and registration information will be available in March from SCSA, 7515 N.E. Ankeny Rd., Ankeny, Iowa 50021.

MUCKING ABOUT

Jackleg drilling, hand mucking and Brunton surveying will probably not become standard events in the Olympics any time soon. However, competition in these and other events will be fierce when at least 16 mining schools square off in the Fifth Annual Intercollegiate Mining Contest scheduled for March 11-12, 1983, in Golden, Colo. Montana Tech has been victorious for three consecutive years. For more information on entering or attending the contest, contact Joseph D. Cooper, c/o Mining Department, Colorado School of Mines, Golden, Colo. 80401 or call (303) 273-3700.

WILDLIFE SHORTCOURSES

The Department of Fishery and Wildlife Biology at Colorado State University will offer two wildlife conservation short courses in 1983. The first session, scheduled for Jan. 17-21, is designed for professionals interested in wildlife research, administration and management. The second session is planned for April 5-8 and will present wildlife management concepts to non-professionals. Field trips will be included in both sessions. For more information, contact Wildlife Shortcourses, Division of Continuing Education, CSU, Fort Collins, Colo. 80523 or call (303) 491-6222.

SELLING THE SUN

Marketing solar energy will be the theme of a Jan. 20, 1983 seminar in Providence, Rhode Island. Sponsored by the New England Solar Energy Association, "The Successful Solar Business: Effective Marketing and Business Planning" will discuss methods of making solar businesses more profitable. Registration is \$75 for NESEA members, \$95 for non-members. For more information contact Larry Sherwood, New England Solar Energy Assoc., P.O. Box 541, Brattleboro, Vt. 05301, or call (802) 254-2386.

TRUSTING WILDLIFE

The Wyoming Agriculture-Environment Committee will meet Dec. 16 at the Fremont County Library, Lander, Wyo., to discuss the state's Wildlife Trust Fund Legislation. The committee will address key points of the legislation such as allocation of funds and scenic easements. The committee consists of representatives from agriculture and environmental groups in Wyoming. For more information, contact Laney Hicks, Box 721, Dubois, Wyo. 82513 or call (307) 455-2949.

EYES IN THE SKY

The Soil Conservation Society of America has published a book which describes the use of remote sensing from aircraft and satellites in managing natural resources. *Remote Sensing for Resource Management* contains sections on land, water, soil and mining resources. The 688-page book includes over 250 illustrations and costs \$40 for SCSA members, \$45 for non-members. Copies may be ordered from SCSA, 7515 N.E. Ankeny Rd., Ankeny, Iowa 50021.

FARMING AND WILDLIFE

Water quality, soil conservation practices and the relationships between wildlife and crop production are discussed in proceedings from an agriculture-wildlife workshop conducted in June, 1982, at Iowa State University. Copies are available from Dr. Robert B. Dahlgren, Iowa Cooperative Wildlife Research Unit, 11 Science Hall II, ISU, Ames, Iowa 50011.

MARINE BIOLOGY LECTURES

The Colorado School of Mines will present a seven-part lecture series on coastal sedimentation and marine geology in 1983. The series, sponsored by SOHIO Petroleum Co., will feature internationally known geologists and researchers. The lectures are scheduled every second week beginning Jan. 17 and are free to the public. For more information, contact Office of Special Programs and Continuing Education, CSM, Golden, Colo. 80401 or call (303) 273-3321.

BARRIERS TO DEVELOPMENT

"Barrier Islands: Man-Influenced Systems" discusses the natural functions of barrier islands and the impacts of their over-development. The booklet is available from the Barrier Islands Coalition, 122 E. 42nd St., Suite 4500, New York, N.Y. 10017.

RENEWABLE CONFERENCE

"Renewable Resource Inventories For Monitoring Changes and Trends" will be the theme of an international conference to be held Aug. 15-19, 1983, in Corvallis, Ore. The conference's objective is to develop methods of inventorying timber, wildlife and soil in order to gauge future losses of these resources. In addition to a busy schedule of seminars, the conference will feature field trips to Crater Lake National Park and Mt. St. Helens. Registration is \$100. For more information, write to John F. Bell, General Chairman, School of Forestry, Oregon State University, Corvallis, Ore. 97331.

STATE OF WYOMING PUBLIC NOTICE

PURPOSE OF PUBLIC NOTICE

THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (FWPCA), P.L. 92-500 AND THE WYOMING ENVIRONMENTAL QUALITY ACT (35-11-101 et seq., WYOMING STATUTES 1957, CUMULATIVE SUPPLEMENT 1973).

IT IS THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS TO AND (3) INDUSTRIAL FACILITIES, TO MODIFY (1) COMMERCIAL PERMIT, AND (1) MUNICIPAL PERMIT, AND TO RENEW AND (10) FISH HATCHERY PERMITS.

APPLICANT INFORMATION

(1) APPLICANT NAME: Eldorado Exploration, Inc.
MAILING ADDRESS: P.O. Box 1629
Gillette, WY 82716
FACILITY LOCATION: Campbell County, Wyoming
PERMIT NUMBER: Wy-0031755

Eldorado Exploration, Inc. intends to construct an open pit coal mine which will be located approximately twenty miles northwest of the City of Gillette, Wyoming. Waters encountered in the mining process will be discharged at three different locations as described below:

Discharge point 001 is located in the NW¼, NE¼, of Section 28, T52N, R75W. It is the outflow from Sedimentation Pond No. 1. Sedimentation Pond No. 1 will receive sump water from the north end of the Echeta Pit and drainage from soil stockpile road, and the northern part of the plant site, as well as runoff from undisturbed adjacent areas.

Discharge point 002 is located in the SE¼, NE¼, of Section 28, T52N, R75W. It is the outflow from Sedimentation Pond No. 2. This pond will receive sump water from the eastern part of the pit, drainage from the access road, main haul road, and the southern part of the plant site, and runoff from adjacent disturbed and undisturbed areas.

Discharge point 003 is located approximately 250' south of point 002 in the SE¼, NE¼, of Section 28, T52N, R75W. It is the outflow from Sedimentation Pond No. 3. This pond will receive sump water from the eastern part of the pit and drainage from the access road and adjacent undisturbed areas.

Proposed effluent limitations are based on standards which have been determined by the State of Wyoming to represent "Best Available Treatment Technology."

The receiving streams (North and South Draws and Wild Horse Creek) are all Class IV Waters. Monitoring of effluent quality and quantity is required on a regular basis with reporting of results quarterly. The permit is scheduled to expire November 30, 1987.

(2) APPLICANT NAME: The FMC Corporation
MAILING ADDRESS: Box 431
Kemmerer, WY 83101
FACILITY LOCATION: Lincoln County, Wyoming
PERMIT NUMBER: Wy-0031763

The FMC Corporation operates an experimental Coke Plant located south of the City of Kemmerer, Wyoming. The process wastewater at the plant is routed to a complete contaminant evaporation pond. However, water treatment plant wastes, septic tank overflow, boiler and cooling tower blowdown as well as some plant site natural runoff is routed to a second "clean water" pond. To date, the clean water pond has never discharged, but because of high precipitation during the past year the pond now has the potential to discharge and the Company has requested that a discharge permit for the pond be issued. If the pond discharges, the receiving water will be the North Fork of Little Muddy Creek which is also known as "Mammoth" or "Cumberland" Creek.

The proposed permit requires compliance with effluent limitations which are considered by the State of Wyoming to represent "best available treatment" and which are sufficient to insure no violations of Wyoming's in-stream water quality standards.

Self-monitoring of effluent quality and quantity is required on a periodic basis with reporting of results quarterly. The permit is scheduled to expire December 31, 1987.

(3) APPLICANT NAME: WYCO Pipeline Company
MAILING ADDRESS: P.O. Box 2100
Denver, CO 80201
FACILITY LOCATION: Laramie County, Wyoming
PERMIT NUMBER: Wy-0031747

WYCO Pipeline Company is the operator of an underground oil pipeline located south of the City of Cheyenne, Wyoming. A leak in the pipeline caused oil contamination of the groundwater in the vicinity of the leak. In effort to reclaim the lost oil and to clean up the groundwater an oil recovery trench will be constructed at the site. A well located in the trench will pump the oil groundwater mixture to an oil/water separator and then to an earthen skim pit which will discharge via use of a "siphon pipe" to a storm sewer which eventually flows into Crow Creek (Class IV Water).

The proposed permit requires that the oil and grease concentration of the effluent not exceed 10 mg/l. Periodic monitoring of effluent quality and quantity is required with reporting of results quarterly. The permit is scheduled to expire November 30, 1987.

(4) APPLICANT NAME: Paul J. McGee
MAILING ADDRESS: Northland Mobile Home Park
1400 Boise
Gillette, WY 82716
FACILITY LOCATION: Campbell County, Wyoming
PERMIT NUMBER: Wy-0027634

The Northland Mobile Home Park is a development of 229 spaces located on the northside of the City of Gillette, Wyoming. Wastewater treatment for the park is provided by an extended aeration package plant which discharges to Little Rawhide Creek (Class IV Water).

The proposed permit requires compliance with Wyoming's In-stream Water Quality Standards and National Secondary Treatment Standards. In addition, the permit requires the park to connect to the City of Gillette's Sewage Collection System as soon as such service is made available by the City. Periodic monitoring of effluent quality and quantity is required with reporting of results quarterly. The permit is scheduled to expire February 29, 1988.

(5) APPLICANT NAME: The Board of Public Utilities, City of Casper
MAILING ADDRESS: 200 N. David
Casper, WY 82601
FACILITY LOCATION: Water Treatment Plant

PERMIT NUMBER:

Wy-0023612

The Casper water treatment plant has two discharges to the North Platte River (Class II Stream). Discharge point 001 is the overflow from the filter backwash settling ponds. Discharge point 002 is the discharge caused by the backwashing of the raw water intake screens.

The proposed permit includes effluent limitations on discharge 001 which are considered to be "best practicable treatment" and are effective immediately. The only limitations on discharge point 002 is on total residual chlorine concentration (.5 mg/l) and pH (6.0 - 9.0). The total residual chlorine limitation in discharge 001 (.1 mg/l) and 002 are based upon insuring that the toxic level of chlorine is not reached in the receiving stream based on the following:

Seven consecutive day - ten year low flow in North Platte River - 377 cfs
Maximum discharge from 001 - .5 MGD
Maximum discharge from 002 - .1 MGD
Toxic level of chlorine - .002 mg/l

The proposed permit requires periodic self-monitoring of both discharge points with reporting of results quarterly. The permit will expire January 31, 1988.

(6) APPLICANT NAME: Wyoming Game and Fish Department
MAILING ADDRESS: Fish Hatcheries and Rearing Stations
5400 Bishop Blvd.
Cheyenne, WY 82002
FACILITY LOCATION: Daniel Hatchery - Sublette County, Wyoming
PERMIT NUMBER: Wy-0000086
FACILITY LOCATION: Boulder Rearing Station - Sublette County, Wyoming
PERMIT NUMBER: Wy-0000094
FACILITY LOCATION: Clarks Fork Hatchery - Park County, Wyoming
PERMIT NUMBER: Wy-0001988
FACILITY LOCATION: Como Bluff Hatchery - Albany County, Wyoming
PERMIT NUMBER: Wy-0001996
FACILITY LOCATION: Dubois Hatchery - Fremont County, Wyoming
PERMIT NUMBER: Wy-0002003
FACILITY LOCATION: Speas Rearing Station - Natrona County, Wyoming
PERMIT NUMBER: Wy-0002011
FACILITY LOCATION: Story Hatchery - Sheridan County, Wyoming
PERMIT NUMBER: Wy-0002020
FACILITY LOCATION: Tillett Springs Rearing Station - Big Horn County, Wyoming
PERMIT NUMBER: Wy-0002046
FACILITY LOCATION: Wigwam Hatchery - Washakie County, Wyoming
PERMIT NUMBER: Wy-0002054
FACILITY LOCATION: Tensleep Hatchery - Washakie County, Wyoming
PERMIT NUMBER: Wy-0027481

The Wyoming Game and Fish Department operates a total of ten fish hatcheries and fish rearing stations in Wyoming. All of these facilities are designed so that there is a constant flow of water through the various raceways and ponds and then out into the receiving waters (all receiving streams are Class II Waters). Most facilities have more than one discharge point.

As water moves through these facilities, there is some water quality degradation through pick-up of suspended solids (uneaten food, fish wastes etc.). Increased degradation occurs during cleaning of the fish holding facilities, such as during flushing or scrub-down of the raceways.

The proposed permits require compliance with effluent limitations which have been judged by the State of Wyoming to represent "Best Available Treatment" as described below:

1. Instantaneous maximum limitation on total suspended solids during normal operation is based on the following calculation:
Maximum lbs. of food used per day x .75 (one lb. of food results in .75 lbs. of TSS) x .8 (best practicable treatment of 20% removal of TSS).
2. Instantaneous maximum limitation on total suspended solids during raceway cleaning is based on the following calculation:
Maximum lbs. of food used per day x .75 x .8 x percentage of day in which cleaning occurs x 1.5.
3. Self-monitoring sampling and reporting on a semi-annual basis.
4. Self-monitoring samples to be all grab samples.
5. Self-monitoring samples to be collected during April (to represent heaviest load) and November (to represent lightest load).

In addition, the permits contain language which requires any dirt ponds to be cleaned no more than once per year and that such cleaning be done in such a manner as to minimize water quality impacts on the receiving stream.

STATE/EPA TENTATIVE DETERMINATIONS

Tentative determinations have been made by the State of Wyoming in cooperation with the EPA staff relative to effluent limitations and conditions to be imposed on the permits. These limitations and conditions will assure that State water quality standards and applicable provisions of the FWPCA will be protected.

PUBLIC COMMENTS

Public comments are invited any time prior to January 12, 1983. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permits Section, 1111 East Lincolnway, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permits Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80295. All comments received prior to January 12, 1983 will be considered in the formulation of final determinations to be imposed on the permits.

ADDITIONAL INFORMATION

Additional information may be obtained upon request by calling the State of Wyoming, (303) 777-7781, or EPA (303) 327-3874, or by writing to the aforementioned addresses.

The complete applications, draft permits and related documents are available for review and reproduction at the aforementioned addresses.

Public Notice No: Wy-82-013

WPPSS...

(continued from page 1)

nothing more than a skeleton crew. The two terminated plants have saddled the consortium with \$7 billion in debt and no additional power production to help pay it off.

Today, with supply system members trying to escape the crushing debt that has accompanied the five plants, and with investors starting to doubt that WPPSS can bring a nuclear plant to operation, WPPSS 2 is the last great hope. The sooner it generates both electricity and revenues, the sooner the consortium members can begin to believe their supply system will survive.

But some observers call WPPSS 2 "a plant that won't work." And Stuart Sandler doubts it can operate for 40 years without what is euphemistically called an "event."

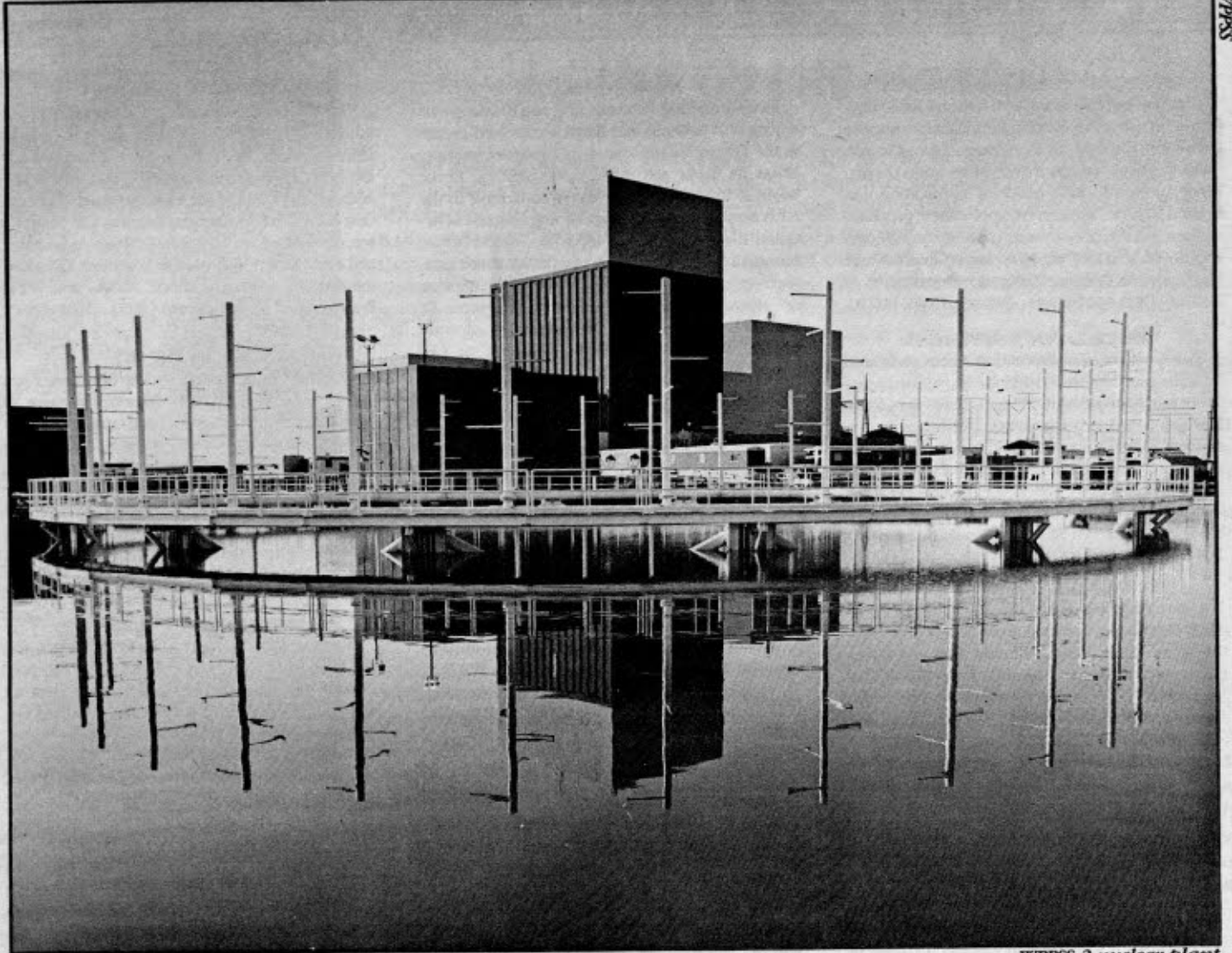
To fully understand Sandler's doubts, it is necessary to know a bit about the process of building a nuclear plant.

Hundreds of thousands of lives depend on the quality of nuclear plant construction. As a result, in the last three decades, federal laws have been written to ensure construction quality throughout the building process.

Those guidelines require the establishment of procedures for electrical work, concrete work, storage of documents and welding. Those procedures are intended to protect the public. Perhaps none are as complex — or as vital — as those for welding.

In the WPPSS 2 plant there are an estimated 248,000 feet of large pipe, 161,000 feet of small pipe, and 11,250 pipe hangers and restraints. At least 129,000 inches of technical welds hold it all together.

The significance of those figures becomes apparent when safety is considered. The safety of a nuclear reactor depends, for example, on the pipes through which water is pumped to the reactor to cool the core. If that flow of water is broken, as happened at the Three Mile Island plant in Pennsylvania, the uranium fuel would quickly overheat and could melt its way down through the plant and into the ground. The term China Syndrome was coined when someone once speculated that



WPPSS 2 nuclear plant

No one knows how many of WPPSS 2's defective welds have been corrected. NRC inspector Al Toth said, "They didn't do any bookkeeping as to how many welds they've corrected."

the overheated core would be so hot that it could melt all the way through the earth to China.

To prevent such catastrophes, procedures spell out the steps to follow in

performing each type of weld in or around the pipes.

To certify that the procedures work and that the welds will actually be safe, the procedures are supposed to be

tested in a laboratory before they're given to the welders.

Soon after Sandler arrived on the job, it was discovered that the wrong tests had been run on the welding procedures that had been in use at WPPSS 2 for five years. When the correct tests were applied to weld samples, the welds failed.

That explained part of the problem with the extensive deterioration of welds in the plant. Something was wrong with the procedures.

There are several kinds of tests that can be run on welds, radiographic, ultrasonic and impact among them. The impact test can be a critical one.

"A weld could look good and pass the other tests with no problem," Sandler explained. "But the impact test can tell you if there might be degradation of a weld that radiographs wouldn't reveal."

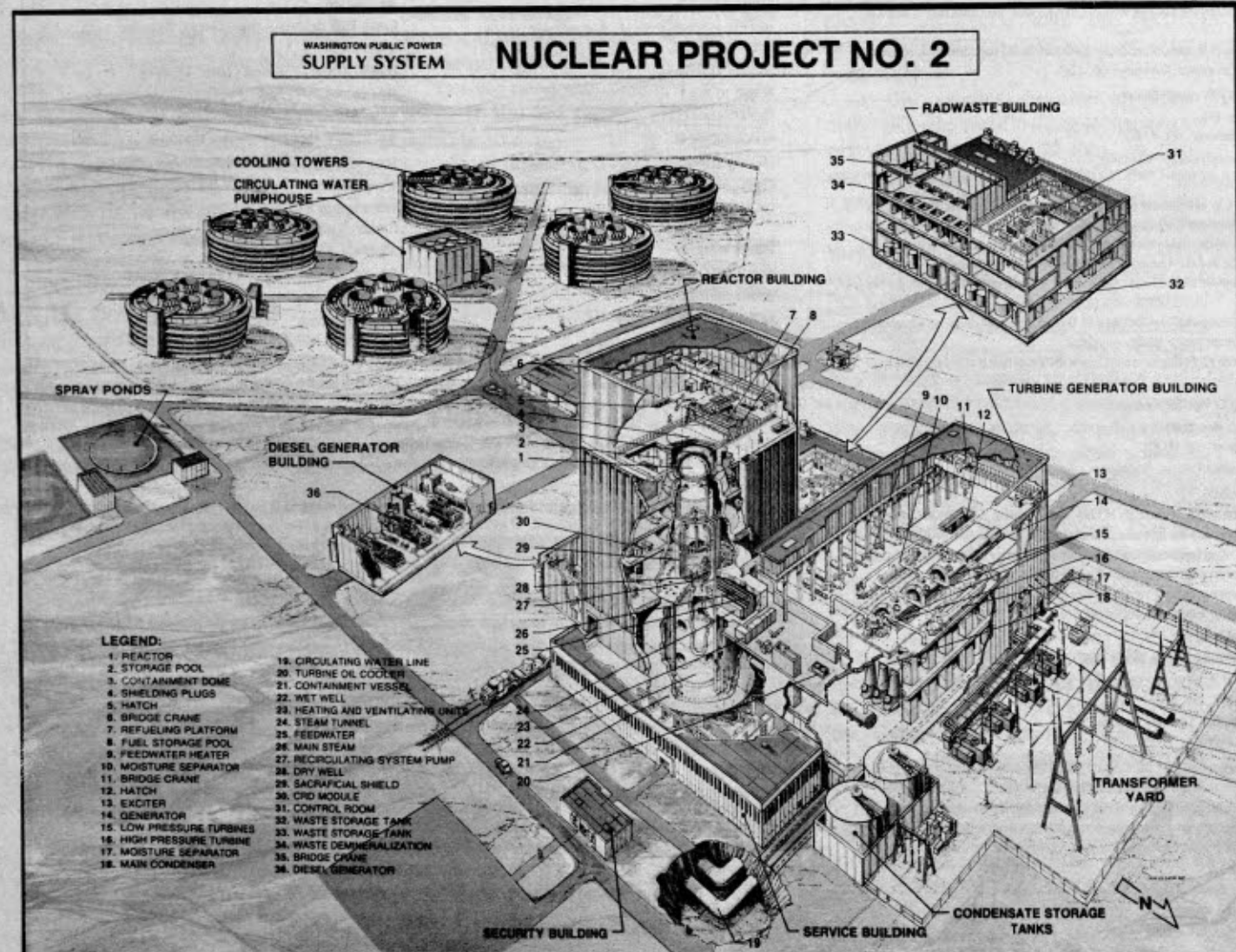
"When they do radiographs and ultrasonics they use x-rays and sound waves and they test for 'visible' defects. But some defects won't show up that way." The impact test is designed to discover those "invisible" defects.

In an impact test, two pieces of metal are welded according to procedure. A section which included portions of each piece and the weld is then cut out. A calibrated notch is made in the weld of this "coupon," which is then placed on two pedestals. A variable force pendulum is then dropped on the weld. If the weld breaks above the minimum allowable force, it passes.

If it fails, the welding procedures can be re-tested or re-written.

"The welding procedures were impact-tested two times while I was at Hanford," Sandler said, "and they failed both times."

WPPSS 2 is more than 92 percent complete



"Many of the welds in that plant are the same ones that failed impact tests when I was working there."

In other words, up to, and including the time Sandler was employed at the site, welds were made according to inadequate procedures.

Even after the impact test failures — and despite the widespread deterioration of welds in the plant — construction continued, using the same procedures to produce more of the same kinds of welds.

While Sandler was still at WPPSS, he discussed the welding problems with the welders, supervisors with both Burns and Roe and various subcontractors and the quality assurance personnel. He discovered that, even after the procedures had been re-written, welders were still making the welds using the old procedures. He was told by subcontractors that this was the way they had always done them and they would continue. He did not have the authority in his position to force the changes.

After Sandler became disillusioned and left in frustration in 1979, the welding problems continued.

In the fall and winter of 1979 and 1980, the Nuclear Regulatory Commission received allegations about the condition of welds in and around the sacrificial shield wall, the thick steel and concrete barrier between the nuclear reactor and the rest of the world. As a result of the NRC's investigation, the WPPSS management concluded that it should halt work at the plant until the defects could be corrected.

In June, 1980, with the plant some 80 to 85 percent complete, construction was shut down.

Burns and Roe, the architect/engineer, admitted at that time that the cracks and defective welds "resulted from inadequate weld procedures..."

"To be more concise," the company said, "we had what amounts to a total

breakdown in quality control in that area."

WPPSS later charged in a lawsuit that more than 10,000 defective welds, for which Burns and Roe was ultimately responsible, had been found. That lawsuit is still pending in King County Superior Court in Washington. Bechtel Corporation replaced Burns and Roe as the architect/engineer on the WPPSS 2 plant in September of 1981.

A year later a task force reported to the NRC on the status of the repairs and said that the deficiencies had been corrected. The repair work was verified by none other than Burns and Roe, the company responsible for the defective welds in the first place.

The verification was conducted in the following way. A limited sample — "a random handful," in the words of NRC resident inspector Al Toth — of the welds were radiographed. Impact tests were not conducted.

The NRC's Toth said that it is not unusual procedure for a company to check its own corrective work. It is standard procedure in the nuclear power industry.

In fact, no one knows how many of the defective welds have been corrected.

"They can't tell you how many welds have been cut out or repaired," said Toth. "They didn't do any bookkeeping as to how many welds they've corrected."

Some WPPSS officials argue that hydrostatic tests successfully run recently as part of pre-licensing procedures, prove the plant is safe. In a hydrostatic test, water is run through the plant system under pressure to check for leaks and strength.

But Roger Johnson, the supply sys-

tem's quality assurance manager at WPPSS 2, hesitates to agree.

"I can't answer if a hydrostatic test would be sufficient," Johnson said.

"The hydrostatic tests only show there are no leaks," Sandler responded. "Many of the welds in that plant are the same ones that failed the impact tests while I was working there."

Johnson said, "I believe there has been some field impact testing done." However, the NRC's Toth said there is no documentation to indicate that.

The thought that WPPSS 2 might be licensed to operate makes Sandler nervous. As pressure mounts to bring No. 2 on-line, the opportunities to check out potentially bad welds diminish. And the former welding engineer, now a gradu-

ate student in communications at the University of Portland, is not reassured by the WPPSS official who called the plant "the best built boiling water reactor in the country."

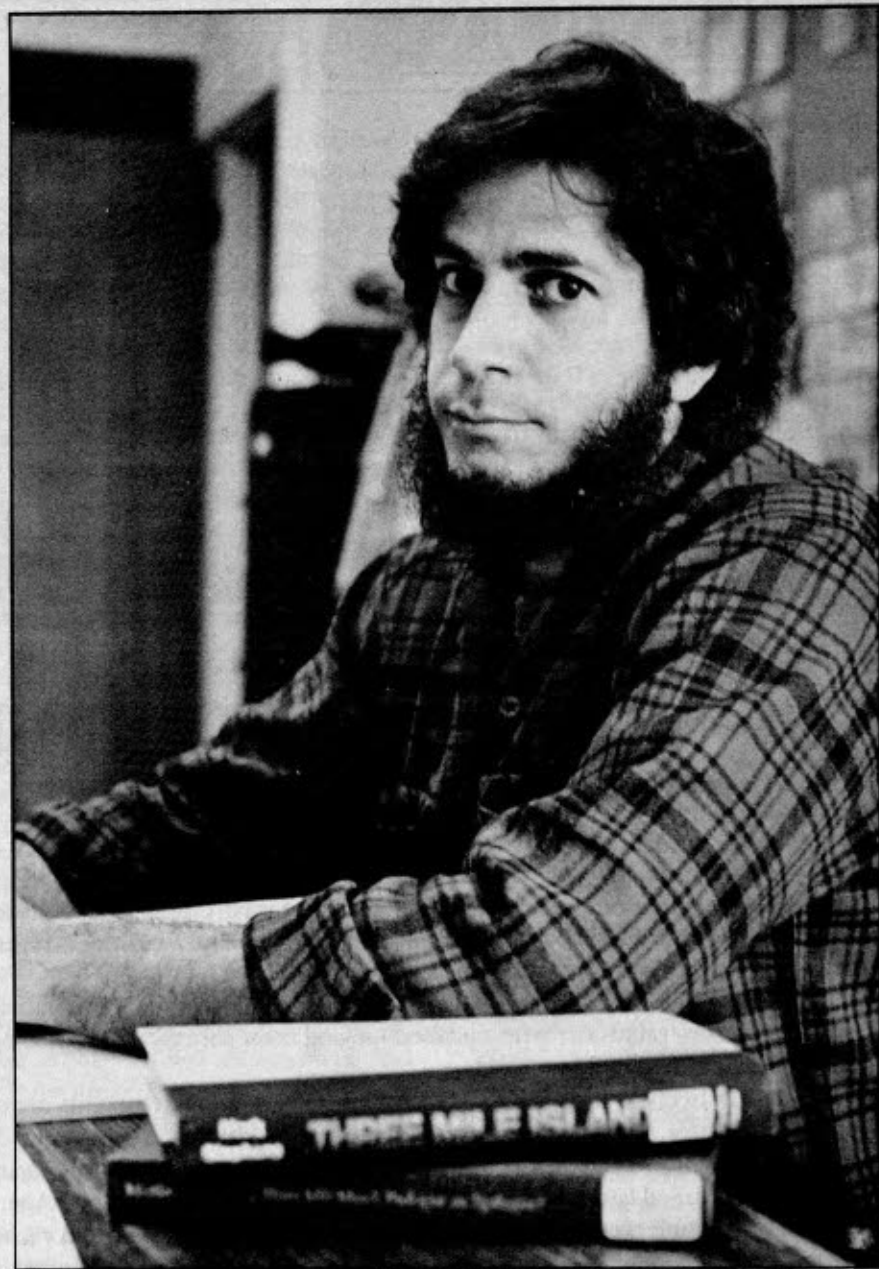
There may be some small hope for action, however.

During a recent conversation in which Sandler outlined the problem for the NRC's Toth, the resident inspector admitted that "it sounds like an area I ought to take a look at."

With the lives of several hundred thousand people and the Columbia River at stake, he just may be right.

+++

John Soisson is a freelance writer in Portland, Oregon. This article was paid for by the HCN Research Fund.



Kent and Donna Darnen

Former WPPSS welding engineer Stuart Sandler

HCN RUG AUCTION #2

Just in time for Christmas, thanks to the generosity of Steve and Connirae Andreas!

1. To place a bid, complete the form below (or print the required information on a separate sheet of paper) and mail it to *High Country News*, Box K, Lander, Wyo. 82520.
2. The highest bids in possession of *High Country News* on Monday, December 20, will be awarded the rugs. Rugs will shipped on that date to assure their arrival in time for Christmas.
3. In the event of a tie, the bid with the earliest postmark will get the rug.
4. Minimum bids are based on the wholesale value of the rugs, the cost if you were to purchase them directly from the trader in the village. We have arranged with the donor to consider this "actual value" for tax purposes. On that basis, we have been advised that the amount of the bid over and above the minimum may be tax-deductible to you, the purchaser. (Bid high!)

AUCTION BID

Name _____
Address _____
City, State, Zip _____
\$ _____ Chilean Poncho \$ _____ Navajo Rug

Signature _____
Date _____

Mail to *High Country News*, Box K, Lander, Wyoming 82520

NAVAJO RUG

Size: 46" x 704

Colors: Geometric pattern in brown, grey and a faded red; field of white; bordered in various browns.

Dyes: Aniline red; natural grey and brown

Remarks: A genuine Navajo rug handwoven between 1915 and 1925. Authenticity verified and value appraised at \$450 three years ago.

High bid: \$539 MAM



CHILEAN PONCHO

Size: 54" x 60"

Colors: Black and white stripes in a field of greys and browns

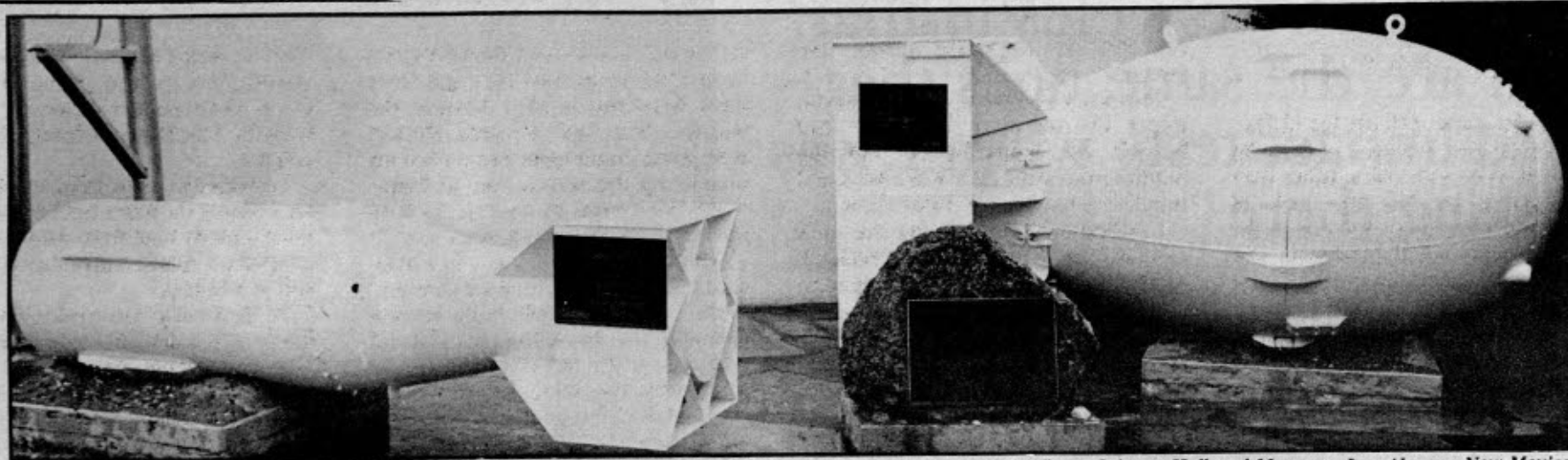
Dyes: Natural

Remarks: A beautiful, heavy-duty poncho that could also serve as a rug or chair throw. Purchased in Chile two years ago. Handspun.

High bid: \$118 MAM



OPINION



Casings of A-bombs dropped on Hiroshima and Nagasaki, Bradbury Science Hall and Museum, Los Alamos, New Mexico

Thinking about the unthinkable

Writing about nuclear weapons and nuclear war is a humbling experience. It is possible, I suppose, to become inured to talking about the kiloton and megaton explosive power of weapons capable of vaporizing entire cities. The destructive power of weapons like the MX is awesome. In fact, it surpasses awesome and cries for some new words in English to describe it.

In *The Fate of the Earth*, Jonathan Schell quotes a survivor of the bombing of Hiroshima, a history professor, who recalled looking back shortly after bombing: "I saw that Hiroshima had disappeared."

Hiroshima has become the yardstick by which large destructive events are measured. Even the Mt. St. Helens eruption was equated, somewhat inappropriately, to the explosive equivalent of the Hiroshima bomb. Hiroshima was destroyed on August 6, 1945, by a bomb called Little Boy, with an explosive yield of 12.5 kilotons. Approximately 130,000 people were killed outright by the blast. People are still dying of the aftereffects. And the city itself "disappeared."

Little Boy was a small bomb by today's standards and would probably be relegated to tactical use — use against troops on the battlefield. Yet the explosion of this "small bomb" killed more people than the combined populations of the two largest cities in Wyoming, home of the new MX missile.

Since the explosion of Little Boy, the world's arsenals have progressed — if that's the word I want — to the point at which there are now about 50,000 warheads in the world, possessing the explosive equivalent of roughly 20 billion tons of TNT, or as Schell says, "1,600,000 times the yield of the bomb that was dropped by the United States on the city of Hiroshima."

The MX missile carries 10 nuclear warheads. Each warhead has an explosive power 26.8 times that of the bomb dropped on Hiroshima. In addition, the MX assures that the U.S. can launch the warhead, send it a distance of 6,000 miles to the enemy and land it within one-twentieth of a mile of its target. In other words, if the MX were

aimed at your house, you could be reasonably certain that the warhead would land at least on your block. The MX can put a warhead on a target roughly the size of four football fields.

As I said, I find this quite humbling. Not because I'm particularly impressed with these leaps of technology. In fact, I'm appalled. But that the destruction of humanity can be so precisely pinpointed makes me feel inadequate.

Also, there is really little I can say about it. What should my position be? I'm against it? Well, if you walked down the street, I daresay you'd find scarcely a soul in favor of nuclear war. Nevertheless, our leaders are stockpiling more weapons, bringing us closer to the final destruction.

There is a point at which discussion of nuclear war and weapons ceases to proceed rationally. I mean, it *sounds* rational, with people talking about "deterrence" and "fratricide" and the rest. But the assumptions upon which these concepts rest are lunacy. The nuclear stockpile has reached the point at which, for instance, the Soviet Union can launch an individual warhead at every town in the U.S. with a population greater than 1,500 if it so chooses and have some bombs left over. We have then reached the time where generals will be using nuclear warheads to hunt down individual pick-up trucks. I don't care what they say about windows of vulnerability, this does not make any sense.

If you can accept the underlying logic of current nuclear deterrence theory — that greater destructive potential makes for less destruction — then you can, I suppose, favor deployment of the MX missile. Personally, I think it sounds like the Mad Hatter.

— DSW

LETTERS

NEW MEXICO ELECTIONS

Dear HCN,

I'm disappointed in your coverage of the elections (HCN, 11/12/82). Here in New Mexico Sen. Harrison Schmitt (R) was defeated. He had one of the West's worst environmental records and was closely aligned with Raygun's policies. We elected Jeff Bingaman (D), the previous attorney general, who looks promising from an environmental, social and economic point of view.

This was a blow to the administration's policy, a victory for the environment and deserved coverage in HCN.

Jack Jaeyes
Las Cruces, New Mexico

WHOOOPS

Dear HCN,

Admittedly, for a liberal conservationist the Utah election results were highly disappointing. Maybe it doesn't really matter that the information given in the November 12 Western Round-up was so botched up with respect to the politicians' names. However, in the interest of accuracy, let me point out the following:

— Republican James Hansen defeated Ogden mayor Steven Dirks, Democrat.

— BYU professor Howard Nielson (R) defeated Hank Huish, running as an independent because he missed the filing deadline to be listed as a Democrat.

— Sen. Orrin Hatch (R) defeated Salt Lake City Mayor Ted Wilson. It was in

the California senatorial battle that former San Diego Mayor Pete Wilson (R) defeated Gov. Jerry Brown (D).

Martin P. Schweizer
Summit Park, Utah

ADVISORY MISTAKE

Dear HCN,

It is indeed unfortunate that Bureau of Land Management advisory appointments in Idaho have gone political (HCN, 11/26/82). Vernon Ravenscroft, a supporter of sagebrush rebels, was not the best choice among environmentalists, conservationists, or recreationists. Never mentioned is his business of forest products, Penta Post Inc. He may have been a rancher/farmer some time ago, but his interests in the last 20 years have been politics, business and financial gain through lobbying for distasteful ventures. He is not a good choice.

David J. Adair
Gooding, Idaho

EVANS ELECTION

Dear HCN,

Sorry to see that you failed to report Gov. John Evans' (D) narrow 3,600 vote win over Phil Batt (R) in Idaho (HCN, 11/12/82). Granted, Idaho's congressional delegation again is an environmental disaster. But Evans has stood up for minimum stream protection, land use planning and other conservation issues, consistently, against a usually abysmal anti-everything legislature.

Kay Hummel
Boulder, Colorado



©GREG SIPLE, 1982

The gremlins of Walden

by C.L. Rawlins

It's hard to think of Henry David Thoreau as seductive. Pictures of the man show him to be something other than prepossessing. He has the look of slightly-astonished rectitude one might find in a hard-shell Baptist who just caught his daughter in the bushes at a revival. Soulful eyes and thin lips. The face could never belong to Don Juan. Henry wasn't cute.

Whatever he had was in his writing, which *must* be seductive. At least insidiously persuasive. How else could he have convinced a big part of my generation, including me, that living like a sharecropper in a shack was the shortest route to heaven? Simplicity, thrift, reducing one's needs instead of striving for riches. I'm surprised the president hasn't banned the reading of *Walden* as an un-American activity.

I read it as a college freshman. Within two years I was living in a treehouse. From the treehouse I moved to the loft of a barn and later a root cellar. I became a stranger to such virtues as central forced-air heating, running hot-and-cold water, electric light. I paid my rent by scrounging empty pop bottles at construction sites and gardening for sweet old ladies. I lied to building inspectors.

I was drawn to woodstoves. Enslaved by kerosene lamps. Mesmerized by out-houses. My sins were beyond counting. I had no credit rating.

Henry had the good sense to limit his aberration to a short term: one year. I've been doing it for 10 years and there's no end in sight. I won't apologize. I'm incorrigible. Worse yet, I like it. Usually.

Other times I see the error of my ways. Just this morning, I realized that my true destiny was to live in a condo, keep my thermostat up to 80 degrees and eat till I weigh 400 pounds.

I woke up feeling that something was wrong. The impression was definite. It was dark and the sun was still at least an hour away. I opened the other eye and nudged my body awake. I arrived at the

problem. My feet were outside the covers.

That's not a problem, you say. But you forget my weakness. The stove had burned out hours before and the temperature in the cabin was a brisk and refreshing ten degrees Fahrenheit.

I pulled my tootsies under the quilt carefully, so my toes wouldn't break off. After a few minutes, as blood began to circulate through the glacial fastnesses of my capillaries, I felt like my precious trotters were subject to attack by red ants. From the inside. I shrugged and tried to sleep again.

The damage was done. All 76.25 inches of mortal husk was awake. My stomach snarled and demanded coffee. My back complained about the fact that I had — Are you listening Henry? — built my own bed. The boards hadn't cost me a cent, but they were of random thickness. My bladder recalled the two beers I'd swallowed before retiring, with increasing urgency.

I prayed for a guardian angel to flutter down and light the stove. A coyote howled somewhere, but nothing else happened. With sincere regret I flung back the covers and exposed tender skin to the air of my quaint little home. Zounds! Cazart! HOO—HAA!!

Further interest was lent to the tableau by the fact that I had no indoor — ahem! — facilities. I fumbled for a flashlight and moved the curtain aside to have a look at the thermometer mounted outside. Minus 22 degrees. From goose bumps, my skin progressed to eagle bumps, then onward to ostrich bumps. My bladder screamed and I dashed for the back door in the same condition as Adam entered Eden.

The snow certainly was pretty. All fluffy and sparkly around my bare feet. I peed. I highstepped back to the door and groped at the handle. Alas. I was foiled by a design flaw that I'm sure won't occur in my condo. The miserable little hook on the screen door had flipped into the miserable little eye and I was marooned.

I voiced impassioned appeals to sev-

eral major deities and then repeated items of vicious gossip I had heard about them. A coyote howled down in the willows. "Shut up!" I roared. My feet were going under again. I restrained my urge to rip the screen from its frame. Henry whispered in my ear, "Cost of screen, \$6.43. Waste not, want not."

With commendable cunning, I managed to break a twig from a willow and insert it through a hole in the screen, jimmying the hook from its place. I reflected on the fact that in Miami the roses were blooming. I slammed the door and dove for quilts. I was not greeting the new day with a smile.

It took some time to summon the courage to get up and start a fire in the stove. Finally, I stuffed the firebox with kindling and dumped in a smidgen of kerosene for quick results. I struck a match and lowered the lid. WHOOSH! The old cookstove exhaled a mighty belch of smoke and flame, lifting the lid a full inch from the top. In my haste, I had grabbed a can of Coleman fuel — white gas — instead of the kerosene. It was memorable. Truly. I cringed and the Varmint whimpered from her lair under the bed.

When those festivities quieted down, I put down the fire extinguisher and tossed in some pine splits. I rattled the tea kettle. Ice. I placed it on the stove and dove again for the bed.

After what seemed like a century, give or take a decade, the kettle began to steam. I wobbled to the stove and hefted it in an indiscreet manner, considering that I was still unclad. I screamed like a heretic as a dollop of hot water splashed my...well, we needn't go into that. I threw open the door and applied a handful of snow to the outraged part. Then I donned my jeans before making the coffee. The gremlins retreated for a while.

My stomach escalated its demands to include toast and eggs. Both dishes and frying pan were mysteriously dirty. I recalled that I was out of water, except for the cup or two left in the kettle.

In my last place, I had to carry water

from a creek a quarter mile away. But this place had more modern conveniences — a hand-pump well a mere 50 feet from the door. Shameful luxury, Henry, I admit it.

I emerged from the door in full arctic kit, carrying the water bucket and humming a merry tune from *Marat/Sade*. I grasped the handle and pumped. Frozen stiff as a bishop.

To thaw out a frozen pump, one applies generous draughts of boiling water. That assumes one has water. I ripped icicles from the eaves and packed the bucket with snow. The sky was blue. Not a cloud. It was a beautiful day.

I waited for the snow to become boiling water. I was too mad to wash dishes. The gremlins had regrouped and were telling Reagonomics jokes behind the shed. I pondered inducing James Watt to ravage Thoreau's grave with a bulldozer. The Varmint watched me with suspicion and stayed under the bed.

After three cycles of boiling water and cursing, the pump thawed out. The gremlins got bored and wandered over to visit Grendel, my 1960 Volkswagen bus. The gremlins like Grendel like kids like Disneyland. I went in to eat.

Breakfast helped, though I broke both yolks and burned the toast. Carbon purifies the blood. I poured another cup of coffee. The Varmint decided it was safe to come out.

I smiled and said, "Nice dog." I set my coffee on the end table and scratched The Varmint thoughtfully. She wagged her long and undisciplined tail enthusiastically. Coffee on the couch, curses in the air and Varmint once again under the bed.

I won't bore you with the rest of the day. After an hour on the oven door, the battery cranked Grendel to life. Then I heard the gremlin laughter as I discovered a flat. It didn't get much better, but it didn't get any worse.

Dinner went without incident and I decided to forgive Henry. In a lot of ways he was a remarkable man and a pillar of American literature. He was human. I'm sure he had days like this.

'Twas just before Christmas

... and all through the West,
Myriad creatures were stirring, they were cold and distressed.
The grizzlies and mule deer and ferrets black-footed
Looked in wonder at plunder and asked: How'd they stood it?

James Watt in his fervor and Big Oil in its zeal
Were increasingly leasing the great commonweal.
The rigs and the draglines arose such a clatter,
We sprang to our typewriters and started to batter.

Out of their beds jump your friends in a panic,
Tear open their mailboxes in a state nearly manic,
When what to their wondering eyes should appear
But a sixteen-page paper with prose fair and clear

On Utah, Wyoming, Montana, New Mex,
On endrin, on Exxon, on shale and BuRec;
On cows, Colorado and overthrust belts;
On ecotage, wetlands, on land trusts and pelts;

On Idaho, tailings, on solar and peat;
On things that you plant and things that you eat;
On smelters, on elk bugles, on gas and more such;
On BLM, EPA, Burford and Gorsuch.

So climb up our ladder; give your friends a subscription
and the issues will fly full of photos and diction.
To readers and revilers, whom we please or offend:

Merry Christmas to all, and to all HCN!

High Country News gift subscriptions are \$15 for the first gift and \$12 for each additional gift. To order, use the coupons below or write your name and address and the names and addresses of those whom you'd like to treat on a separate sheet of paper. Mail it with your check to HCN Gift Subscriptions, Box K, Lander, Wyoming 82520. Discount price applies to new subscriptions only.

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BOOKS

Public transit to public lands

How to Get to the Wilderness Without a Car

Lee W. Cooper. Available from the author, P.O. Box 80584, Fairbanks, Alaska 99708. 1982 \$7.95, paper. 192 pages.

Review by Peter Wild

When you stop to think about it, there's something cock-eyed about the way most of us go camping. Priding ourselves in traveling light, supersensitive about leaving only footprints, we strip ourselves down to the essentials, then roar toward the trail head in multi-ton, polluting, gas-guzzling, steel behemoths.

True, to get from El Paso to Los Angeles by train can be enough to drive

you bonkers. And to travel by bus from Shirley, Montana, to, say, Okanogan, Washington, rivals the complexity of Marco Polo's adventures. Public transportation in the United States approaches a shambles. In light of this, Lee W. Cooper's inexpensive handbook somewhat surprisingly shows how to arrive at national parks, wilderness areas, and other unspoiled refuges in the western United States, Canada and Alaska without the millstone of an automobile.

So it can be done. And often it is cheaper, too.

Cooper's brief introduction gives good dope on comparative shopping, on how to weigh "supersaver" airline tickets with Amtrak discounts and the unlimited mileage plans of Greyhound and Trailways. He backs this up with an appendix listing addresses and telephone numbers for transportation companies and for government agencies

administering places you might want to visit. Without a car you'll have to be a little more aggressive than with one; a phone call or two in advance to check on current fares, schedules, and weather may prevent headaches in the long run.

The bulk of this handy guide consists of park areas listed alphabetically by states and Canadian provinces. Each entry has two parts. A map of the destination faces a discussion of how to get there combined with a short description of attractions. The maps might have more detail, but the accompanying specifics, for instance concerning particular buses to take for the greatest convenience, give us the benefit of the author's earnest researches.

Cooper, however, perhaps afraid of appearing the overzealous propagandist, says little about another major aspect of car-less travel — the bus drivers, the chance encounters, the flutter

HOW TO GET TO THE WILDERNESS WITHOUT A CAR



PUBLIC TRANSPORTATION TO WILDERNESS

In the western United States, including Alaska, and western Canada

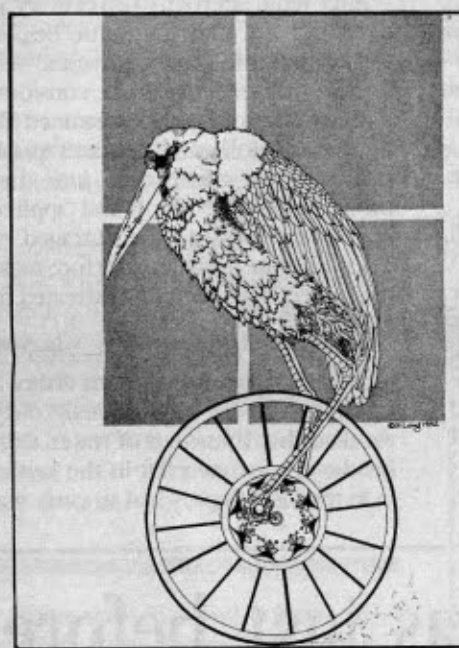
LEE W. COOPER
DEAN JACOBSON, ILLUSTRATOR

of anticipation caused by kooky schedules that, once you get into the swing of it, can add a teasing dimension to getting to the wilderness.

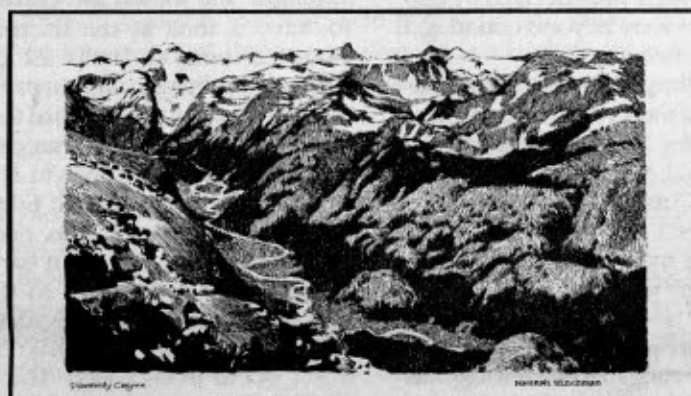
HCN HOLIDAY GIFT GALLERY



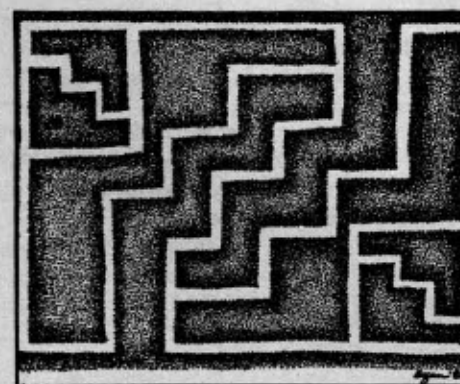
(a)



(b)



(c)



(d)



(e)



OLAUS J. MURIE

A Naturalist's Portfolio Of Field Sketches

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