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CHAPMAN,K. Affiliation Not Assigned
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H. Office of Nuclear Reactor Regulation, Director

SUBJECT: Requests delay in plant operations & acceptance of Coalition for Responsible Energy Educ petition,Article re corrosion at facilities caused by bacteria Gallionella encl.

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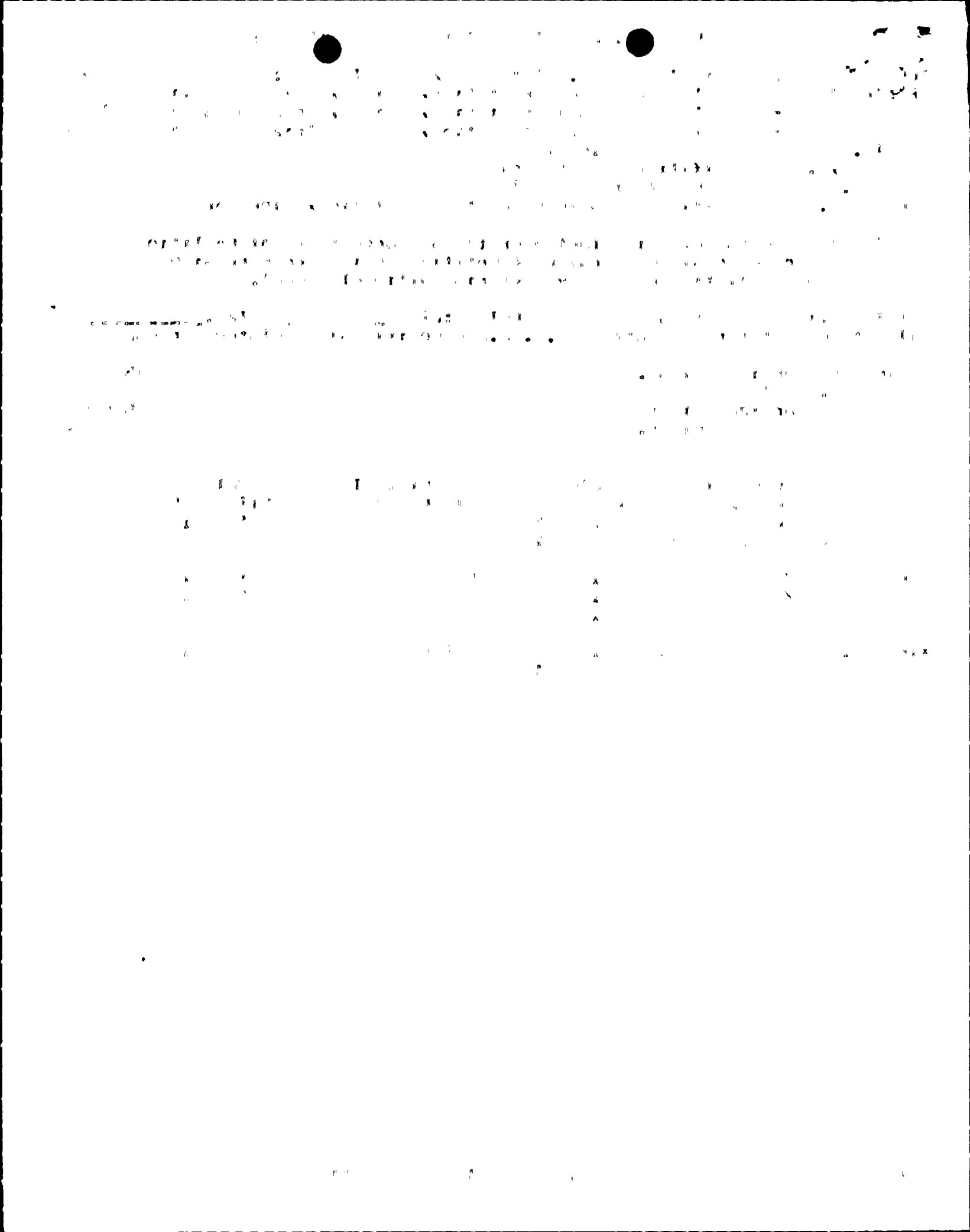

50-528

Mr. Harold Denton
NRR; USNRC
Washington, D.C. 20555

May 14, 1985

Mr. Denton:

Please take the time to read the article I have enclosed, and allow it to influence your decision to delay Palo Verde's nuclear plant operations.

Please accept CREE's petition to delay Palo Verde's nuclear operations.

Thank you for your time.

Sincerely,
Kathleen Chapman
Tempe, Arizona

Bacteria may be eating up Palo Verde units

By Victor Dricks
The Phoenix Gazette 5/6/85

Key components of the Palo Verde Nuclear Generating Station may have been contaminated with metal-eating bacteria when project officials flushed a tainted cooling system.

And one of the nation's leading authorities on nuclear power plant corrosion said steps proposed at Palo Verde to rid the plant of the bacteria *Gallionella* may not be effective.

Daniel Pope of Rensselaer Polytechnic Institute of Troy, N.Y., said the bacteria that ate its way through welds in a cooling system at Palo Verde may have migrated to other parts of the plant.

And although project officials have discounted that possibility, they detected microbiologically influenced corrosion in another plant component last summer, according to a report filed with the U.S. Nuclear Regulatory Commission.

Pope said a similar corrosion problem occurred at the federal government's Savannah River plutonium plant in Aiken, S.C., several years ago. *Gallionella* that invaded a supposedly isolated plant system — like the one at Palo Verde — subsequently damaged another system.

Pope, an associate professor of biology, is writing a study on microbiologically influenced corrosion for the Electric Power Research Institute, a trade group of electric utilities.

In late March, Palo Verde officials reported that *Gallionella* had corroded dozens of pipes and had caused pinhole-sized leaks in about 30 welds of a cooling system for Units 1 and 2.

The contaminated spray pond cooling system is used every time the plant shuts down — either routinely or during an emergency — to remove heat from the nuclear reactor and its support components.

Preparations are under way for initiating nuclear criticality in the Unit 1 reactor later this month, with commercial operation scheduled by the end of the year.

Arizona Public Service Co. officials said the leaks will not affect plant operations.

APS Executive Vice President Ed Van Brunt Jr., told the NRC and the state Corporation Commission that the leaks are "insignificant," and the bacteria that caused them can be killed with chemicals.

But Pope said the chemical treatment APS wants to use to kill the microorganism may not be effective, and failure to remove existing corrosion could cause further damage.

Three consultants — NALCO Chemicals of Naperville, Ill.; Bechtel M&QS of San Francisco; and David Buquette, a metallurgist at Rensselaer — identified a microorganism as the cause of the corrosion.

Palo Verde officials already have spent $65,000 studying the problem and told the state Corporation Commission it could cost an additional $6 million if it became necessary to replace all the affected welds.

"There are ways to go about treating a problem scientifically in contrast to dumping a bunch of chemicals into a cooling system and thinking black magic will cure it," Pope said.

But APS officials think the chemical treatment will work.

Don Karner, APS assistant vice president for nuclear production, said, "We think our corrective action plan will be effective."

The Coalition for Responsible Energy Education, a Palo Verde opponent group, plans to file a request with the NRC later this week asking that it compel APS to clean the existing corrosion on all affected areas; inspect other systems for bacterial contamination and test its proposed treatment program in the lab to see if it is effective, executive director Myron Scott said recently.

The full dimensions of the corrosion problem also have the NRC concerned, Roy Zimmerman, senior site inspector for the Palo Verde project, said.

"This microorganism is all around," Zimmerman said. "It's in the spray pond system. How do we know it's not somewhere else?"

Zimmerman said members of the NRC's Bethesda, Md., Office of Nuclear Reactor Regulation will question APS officials about the possibility microorganisms have invaded other parts of Palo Verde when they meet with them in Washington, D.C., next week.

Last year Van Brunt reported that technicians found microbiologically influenced corrosion on the blades of a cooling water pump at Unit 2.

The corrosion occurred because technicians had failed to completely flush contaminated water out of the inside of a pump after testing, he wrote. The water was left standing for six months.

"MIC (microbiologically influenced corrosion) bacteria probably exist(s) in other safety-related systems at PVNGS (Palo Verde Nuclear Generating Station)," Van Brunt told the commission.