

Accepting Nuclear “Attributes” from Diablo Canyon Would Violate MBCP’s Central Mission: Clean Power, Community Choice

Presentation to the Policy Board of Monterey Bay Community Power
by Daniel Hirsch

Retired Director of the Program on Environmental and Nuclear Policy
University of California at Santa Cruz
10 June 2020

MBCP's Promise & Mission:

1. Community Choice
2. Clean Energy



MBCP + YOU =
Clean Energy



MBCP + YOU =
Clean Choice

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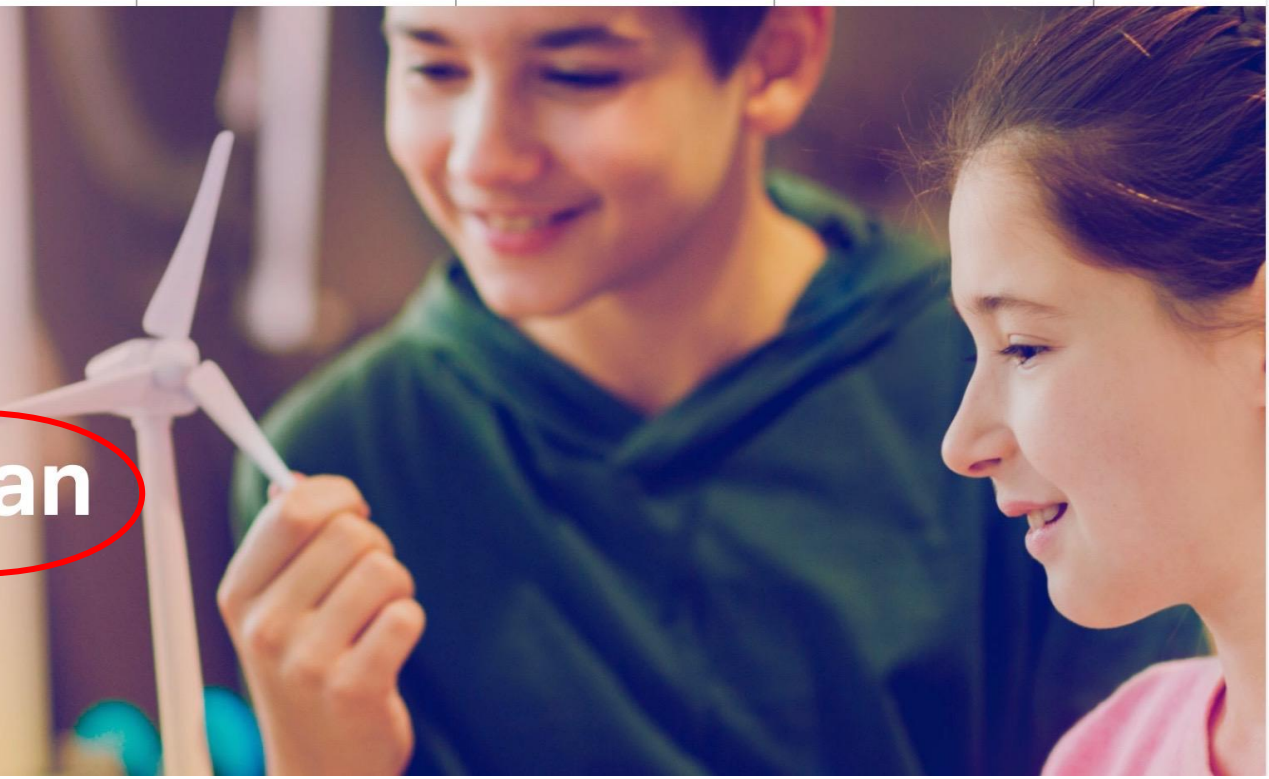
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Community Investment

Ensuring a
Bright, Clean
Future



**MBCP Has Also
Repeatedly Pledged
that it Would be
Nuclear Free.**

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JULY 1, 2018

MBCP procures electricity from carbon-free sources such as solar, wind, and hydroelectric. In addition to being carbon-free, MBCP does not use power produced from nuclear energy or any fossil-based sources.

“MBCP procures electricity from carbon-free sources such as solar, wind, and hydroelectric. In addition to being carbon free, **MBCP does not use power produced from nuclear energy or any fossil-based sources.**”

MBCP blog article, July 2018

"it's been staff practice **not to acquire energy that's generated from coal or nuclear power** plants. Staff has shared this practice with the new jurisdictions from San Luis Obispo and Santa Barbara and some, have partially, based their decision to join MBCP on the assumption that we'll continue that practice."

Staff Report March 4, 2020

The controversy before us today is that MBCP is being asked nonetheless to take nuclear “attributes” from PG&E.

There is no such thing as an energy “attribute” separate from the energy itself.

It is a fiction, designed to be able to tell the consumer they are getting “carbon free” energy when in fact some of the energy actually being purchased comes from system power that includes natural gas (and some coal).

It is like the “indulgences” sold by the Church for sins, a practice which led to the Protestant Reformation. You could sin all you want so long as you bought an indulgence.

If I offer to give you a dog's attributes--constantly barking, running after skunks and bringing the stench into the house, and fleas--but retain title to the dog, you wouldn't think it a great deal.

“b. Challenges [to accepting the nuclear allocation]:

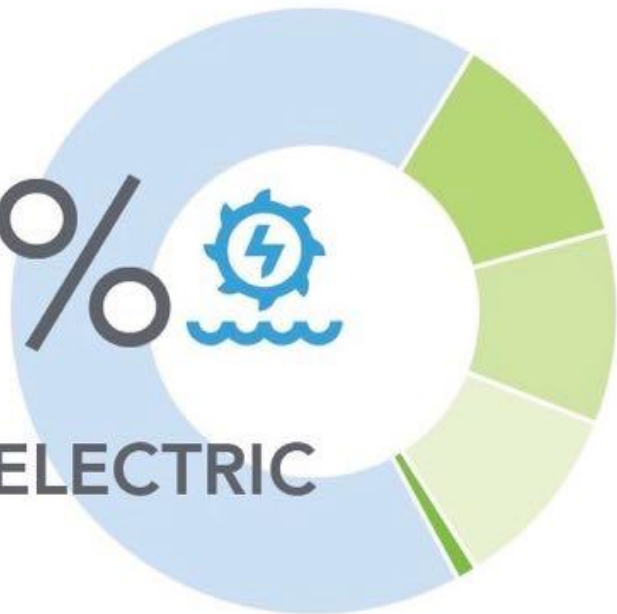
i. Public scrutiny over accepting CFA associated with nuclear generating facility.

ii. MBCP's Power Content Label (score card that MBCP is obligated to submit to the CEC) would include up to 20% nuclear power.”



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RENEWABLE



Geothermal	12%
Solar	11%
Wind	11%
Biomass & Biowaste	0.3%

20%

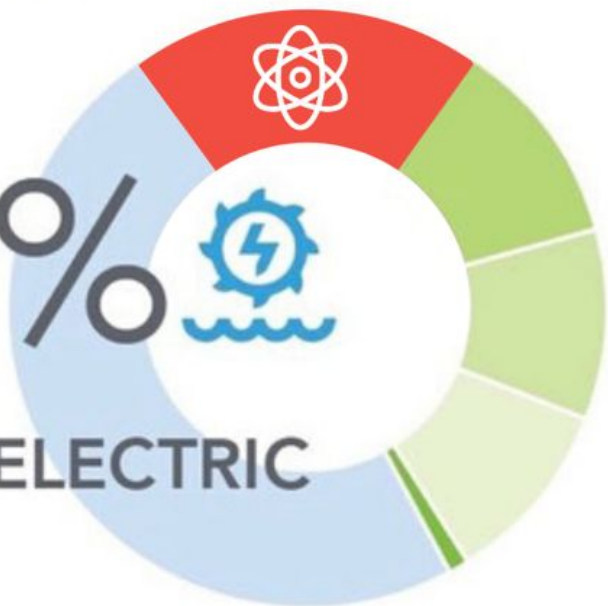
NUCLEAR



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- Geothermal 12%
- Solar 11%
- Wind 11%
- Biomass & Biowaste 0.3%

**So, what are the
“attributes” of nuclear
power, and is it “clean,”
consistent with MBCP’s
mission?**

The “attributes” of nuclear power:

1. Radioactive waste that is dangerous for tens of thousands of generations
2. Proliferation of nuclear weapons
3. Risk of meltdown and widespread contamination
4. Risk of terrorist attack releasing large amounts of radioactivity
5. Environmental justice impacts from pollution from uranium mining and milling
6. Diverts money from renewables
7. Lower carbon emissions than fossil fuels but higher than renewables; not “carbon free”

It is not Clean:

**Immensely
Long-Lived
and Toxic
Nuclear Waste**

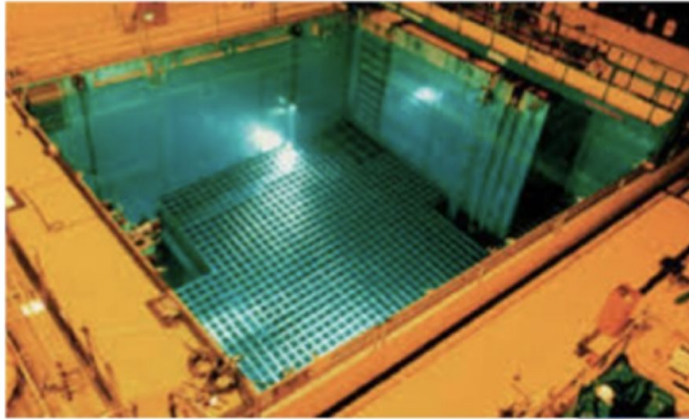


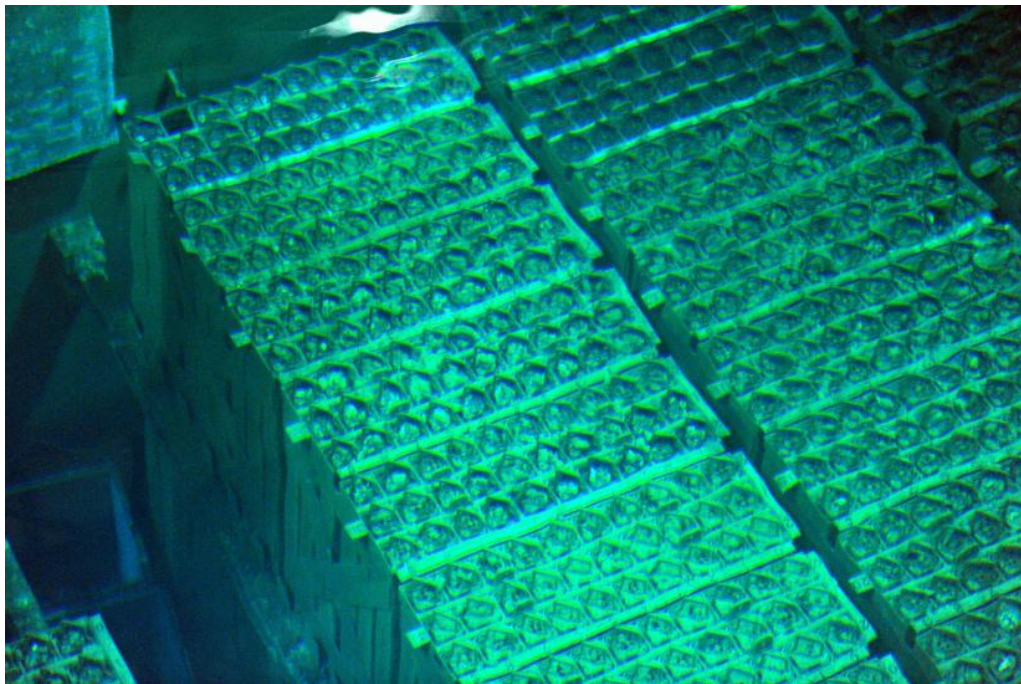
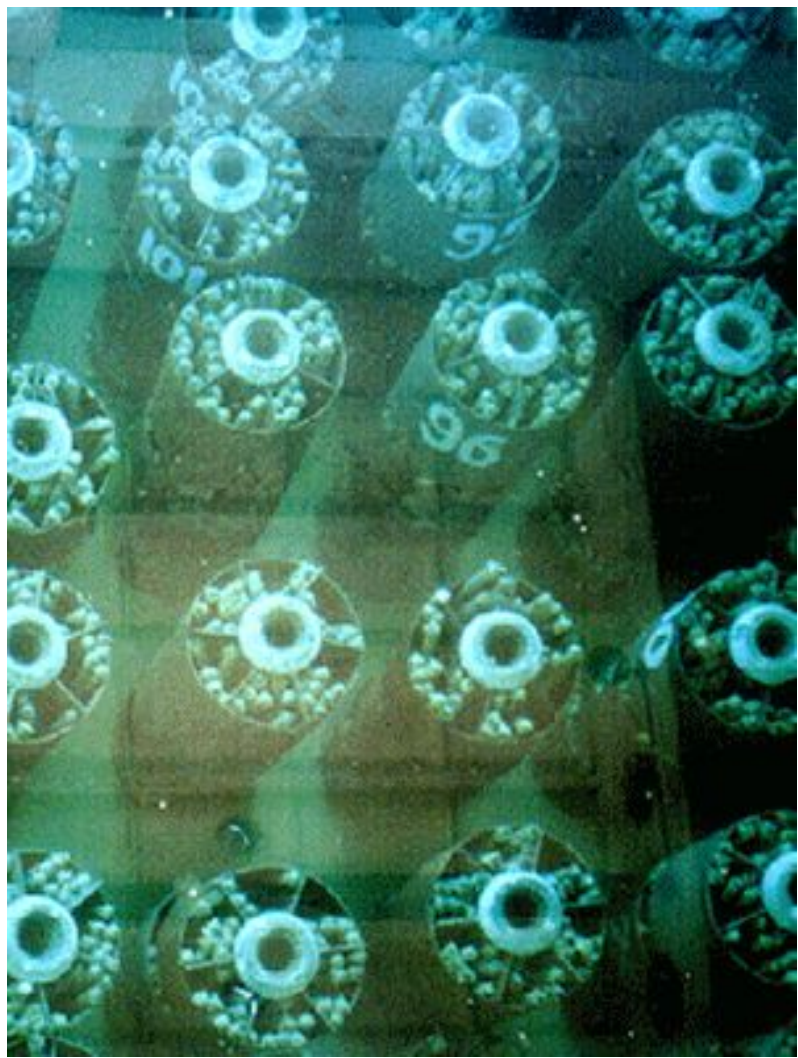


NUCLEAR POWER PLANTS

have produced energy *and...*
highly toxic nuclear waste

**Nuclear
Power
produces
immensely
long-lived
radioactive
waste.**





Irradiated nuclear fuel rods

50 Years of Power, 500,000 Years of Radioactive Waste

Existence of the United States - *244 Years*




Existence of Human Civilization - *~12,000 Years*



Amount of Time Nuclear Waste Remains Radioactive - *500,000 Years*



25K 

100k 







IONIZING RADIATION

(radiation delivered to rays, x-rays, gamma)

human cells from beta rays or alpha particles)

THYROID

Iodine-131
beta (gamma), 8 days

SKIN

Sulfur-35
beta, 87 days

LIVER

Cobalt-60
beta (gamma), 5 yrs.

OVARIES

Iodine-131
gamma, 8 days

Cobalt-60
gamma, 5 yrs.

Krypton-85
gamma, 10 yrs.

Potassium-42
gamma, 12 hours

Cesium-137
gamma, 30 yrs.

Plutonium-239
alpha, 24,000 yrs.

The reproductive organs are attacked by all radioactive isotopes emitting gamma radiation. In addition, the deadly Plutonium-239 is known to concentrate in the gonads. The radiation it emits can cause birth defects, mutations and miscarriages in the first generation after exposure and/or successive generations.

MUSCLE

Potassium-42
beta (gamma), 12 hours

Cesium-137 (and gonads)
beta (gamma), 30 yrs.

LUNGS

Radon-222 (and whole body)
alpha, 3.8 days

Uranium-233 (and bone)
alpha, 162,000 yrs.

Plutonium-239 (and bone)
alpha, 24,000 yrs.

Krypton-85
gamma, 10 yrs.

SPLEEN

Polonium-210
alpha, 138 days

KIDNEYS

Ruthenium-106
gamma (beta) 1 yr.

BONE

Radium-226
alpha, 1620 yrs.

Strontium-90
beta, 28 yrs.
and more.

The times listed next to the type of ray emitted are the half-lives: how long it takes for half of the radioactive material to break down.

If you ingest alpha and beta emitters, they set up permanently next to the marrow of your bones, in your reproductive organs or elsewhere.

The effects of ionizing radiation are not immediate. Exposure to radiation can cause cancers many years later. Exposure to very low levels of radiation can be equally dangerous over time.

Authorship notes:

Illustration: Drawing by Science North and Ontario Science Centre, from the book "The Human Body: A Guide to Human Anatomy and Physiology" by Victor Passmore, Ph.D. and John W. Hoar, M.D., and "Human Biology" by Victor Passmore, Ph.D. and John W. Hoar, M.D., published by McGraw-Hill, 1960. Text: Adapted from "The Human Body: A Guide to Human Anatomy and Physiology" by Victor Passmore, Ph.D. and John W. Hoar, M.D., published by McGraw-Hill, 1960. Photo: Getty Images/Photo Library/Alamy

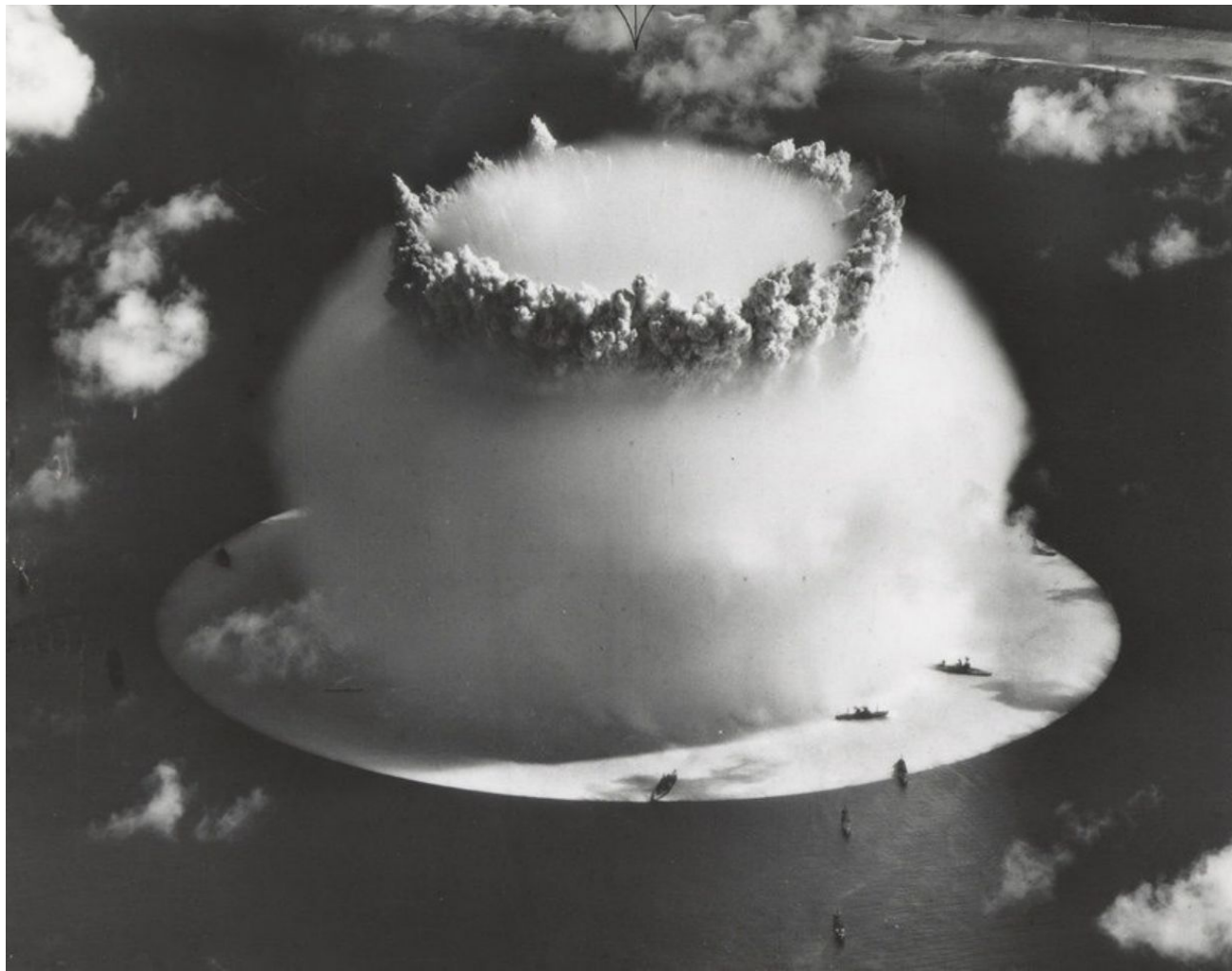
Ionizing Radiation Causes Cancers, Leukemias, Genetic Defects in Offspring, Heart Disease, and Various Other Health Effects

It is not Clean:

Nuclear Power

Proliferates

Nuclear Weapons





**Diablo Canyon, for Example, Produces
Half a Ton of Plutonium per Year –**

**Enough for *250 Nuclear Bombs*
More Powerful Than the One
That Destroyed Hiroshima**







It is not Clean:

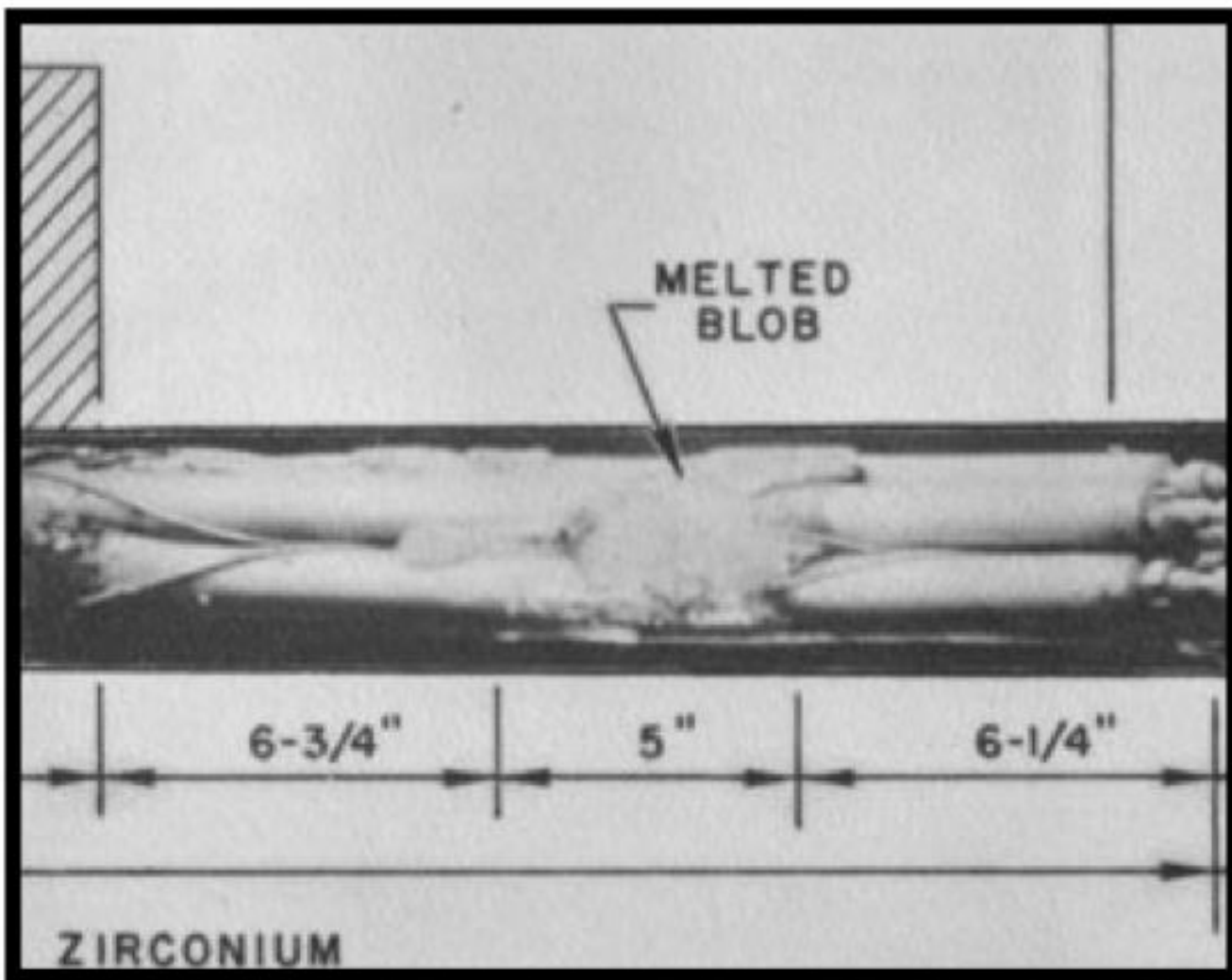
**Nuclear Power Plants Can
Suffer Meltdowns, Releasing
Vast Amounts of Radioactivity
and Rendering Large Areas
Uninhabitable for Generations**

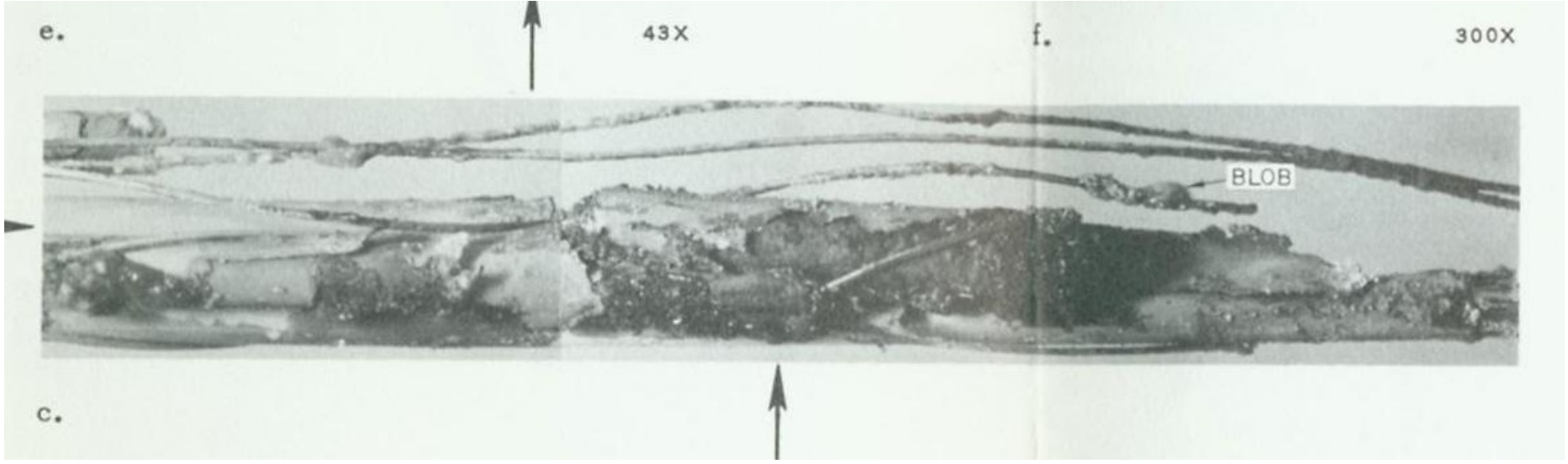
**SANTA
SUSANA FIELD
LABORATORY**

The first reactor to produce electricity for the commercial grid was at the Santa Susana Field Laboratory on the LA-Ventura County line.



**It was also the first to suffer
a partial meltdown.**





Melted Fuel from SRE Reactor in LA Area

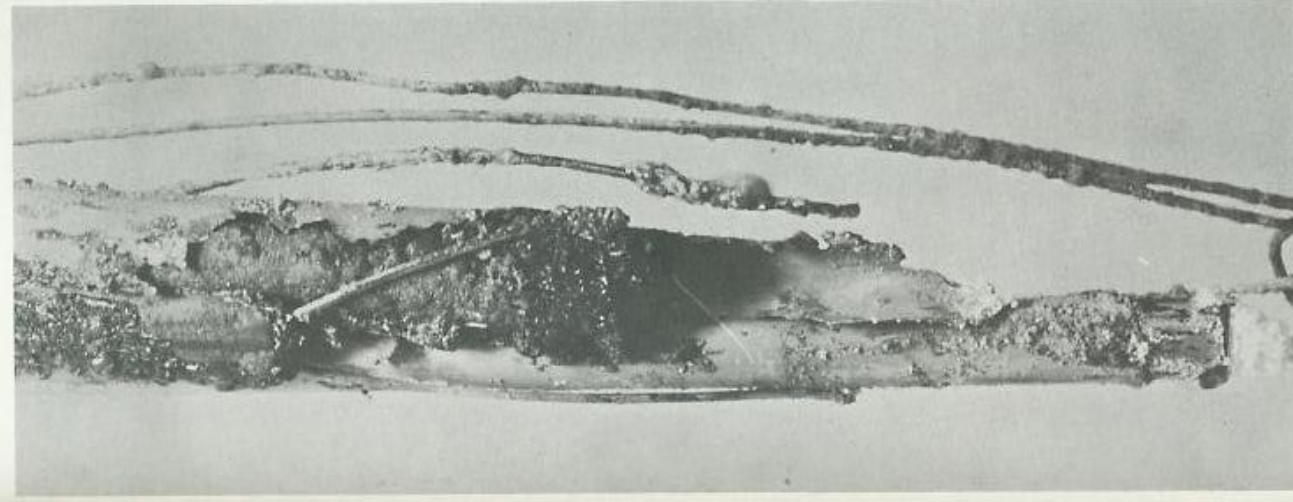


Figure IV-A-6. Bottom of Damaged Element in Channel 55



Figure IV-A-7. Midsection of Damaged Element in Channel 55

It was not the last.

**THREE
MILE
ISLAND**

Met-Ed / GPU

**THREE MILE ISLAND
NUCLEAR
GENERATING STATION**

Authorized Personnel Only

**OBSERVATION CENTER
3/4 Mile Ahead**





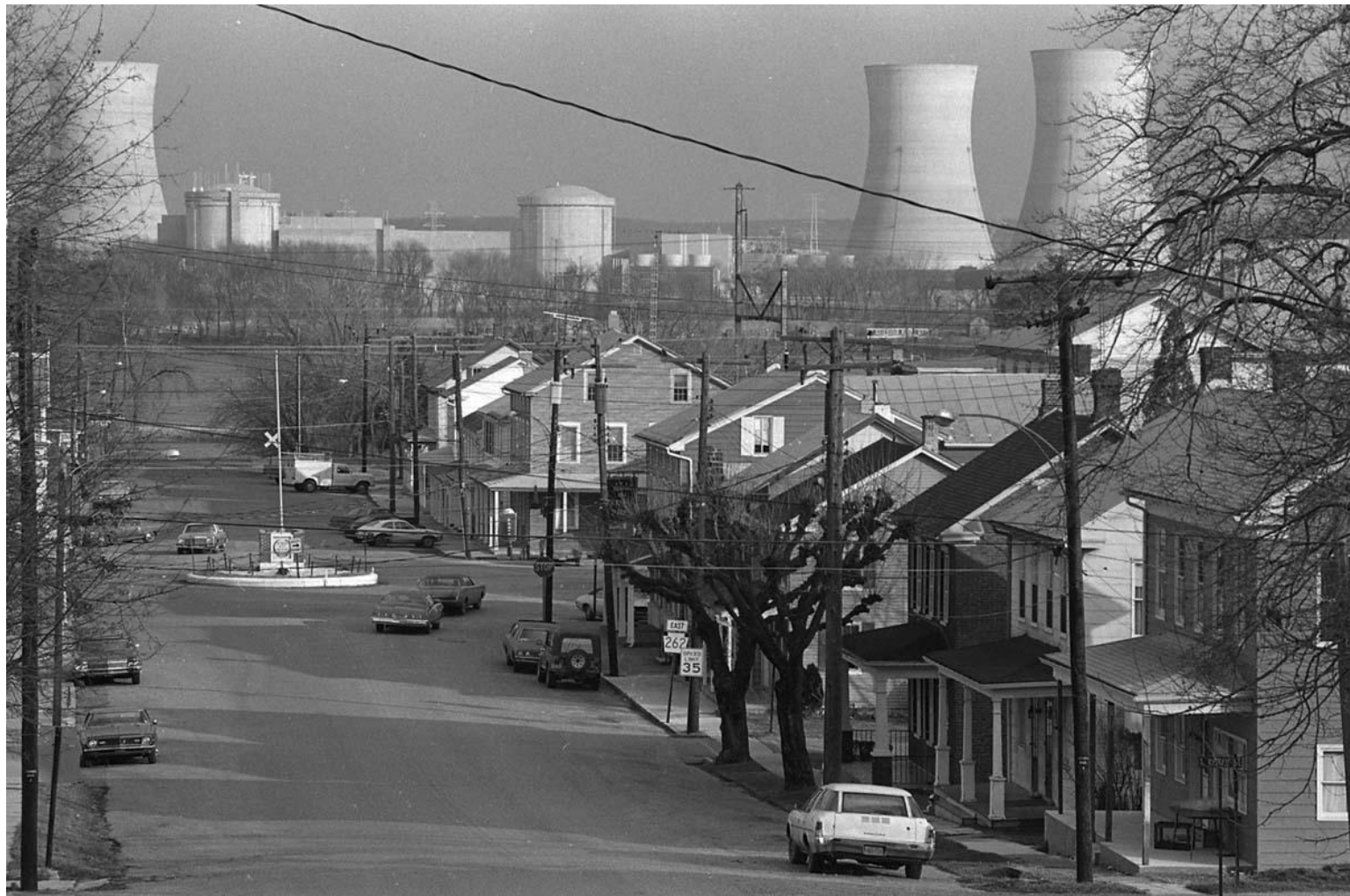
NUCLEAR ACCIDENT AT THREE MILE ISLAND

On March 28, 1979, and for several days thereafter .. as a result of technical malfunctions and human error .. Three Mile Island's Unit 2 Nuclear Generating Station was the scene of the nation's worst commercial nuclear accident. Radiation was released, a part of the nuclear core was damaged, and thousands of residents evacuated the area. Events here would cause basic changes throughout the world's nuclear power industry.

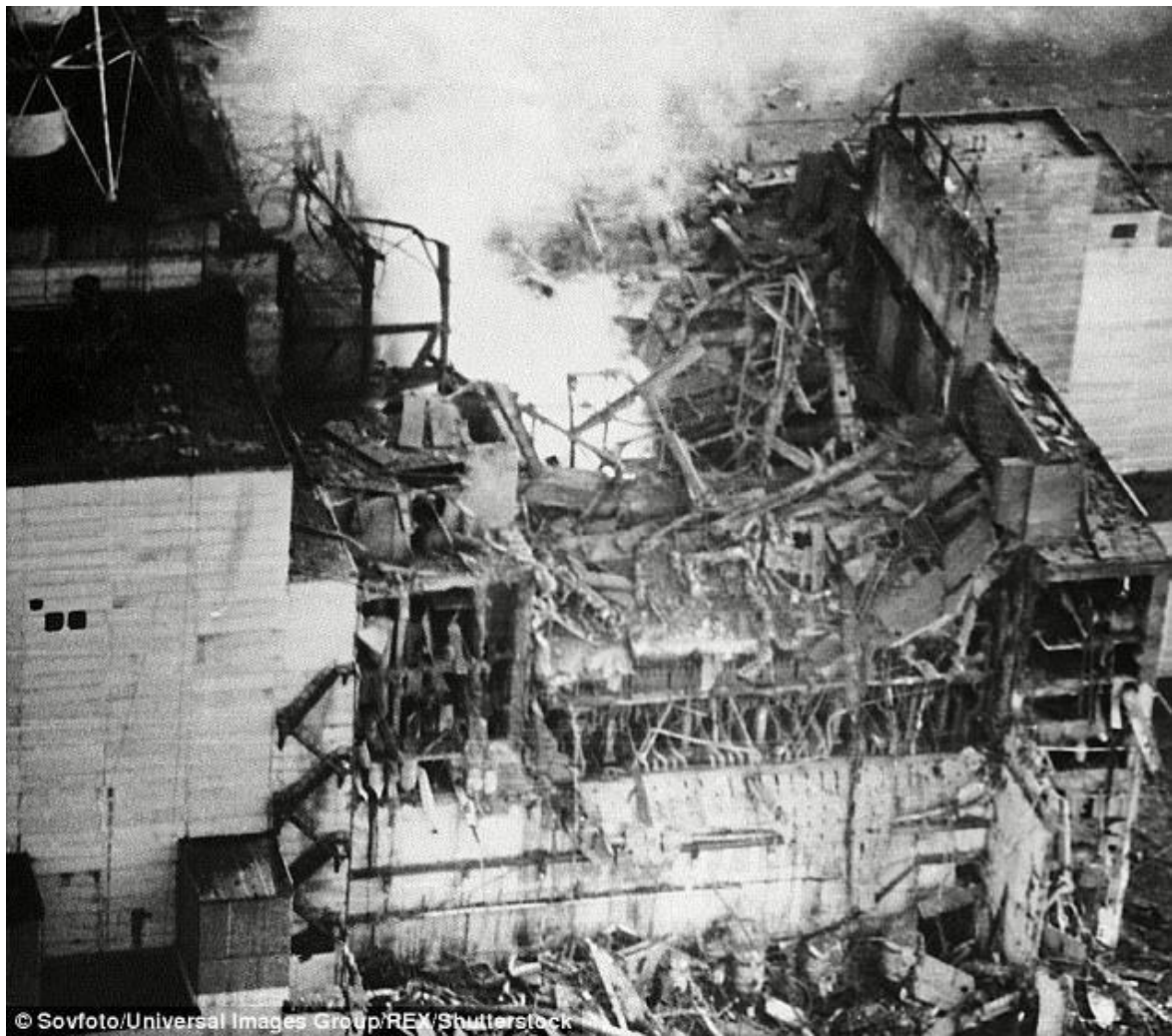
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

1999





CHERNOBYL







**FUKUSHIMA
DAIICHI**







Fukushima smoldering after the March 2011 earthquake and tsunami





Reuters: Kim Kyung-Hoon

David Brower's Definition of a Nuclear Reactor:

**“A Complex Technological
Device For Locating Earthquake
Faults
In California”**

Diablo Canyon Nuclear Plant Was Designed and Permitted Based on the Assertion of No Active Earthquake Faults within 30 km



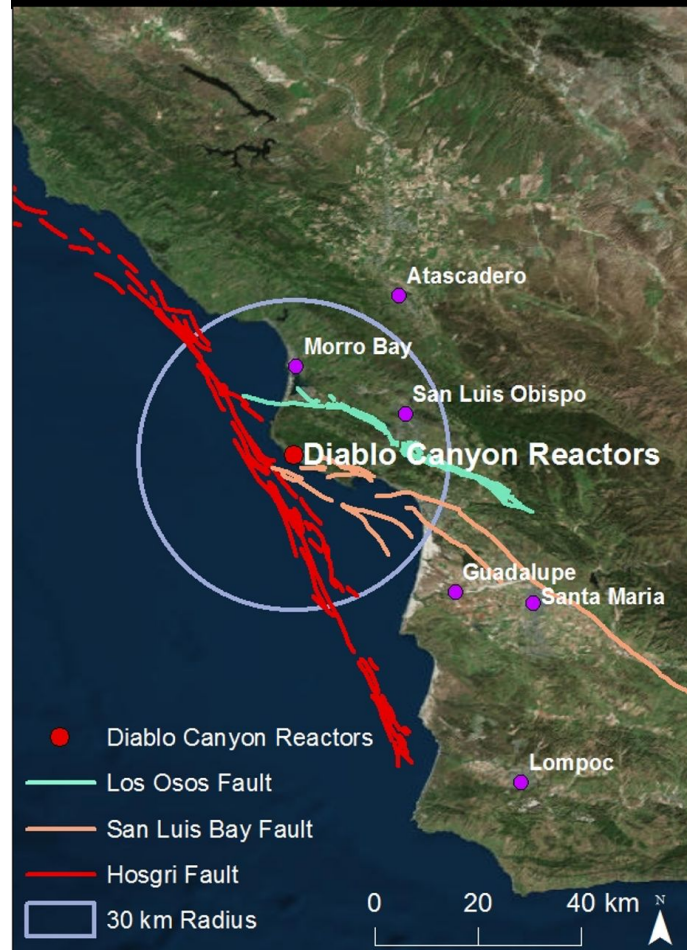
Shortly Thereafter, Hosgri Fault Was Discovered, Coming Within 4 km of the Reactors



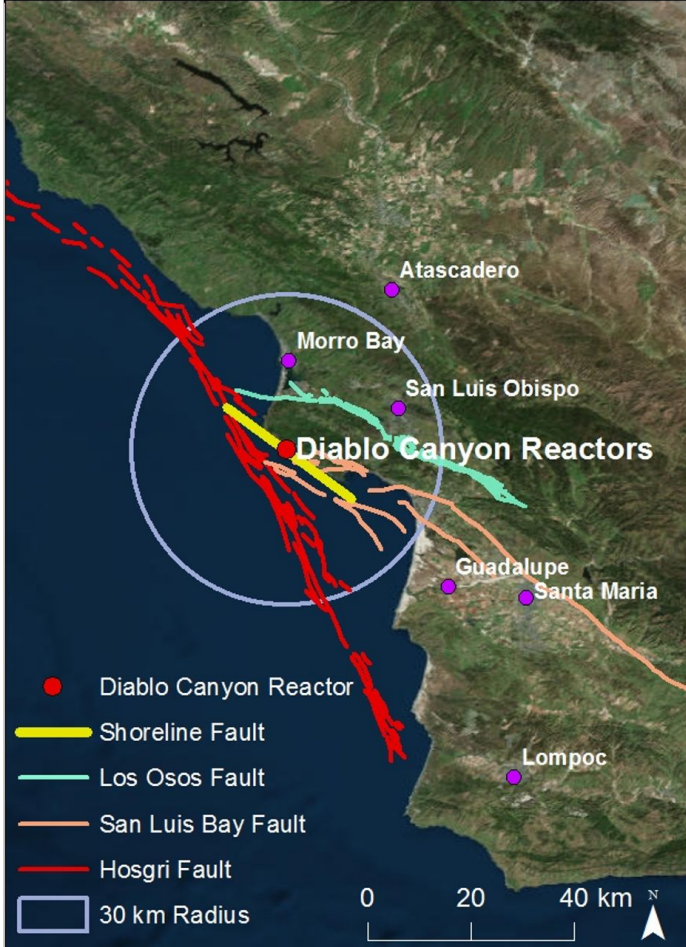
Subsequently, The San Luis Bay Fault Was Discovered To Be Active Near Diablo



The Los Osos Fault Was Also Found To Be An Active Fault Near The Reactors



In 2007 The Shoreline Fault Was Discovered, Coming Within 600 Meters of The Reactors



Instead of No Active Faults Within 30 km, and No Interconnections, It Is Now Known That There are Four Nearby Faults and Several Interconnections



The second part of MBCP's mission
is

COMMUNITY CHOICE.

That means the community decides the
power content, rather than has it
imposed on them.

“Good ends...can be achieved only by the employment of the appropriate means. The end cannot justify the means, for the simple and obvious reason that the means employed determine the nature of the ends produced.”

Aldous Huxley
Ends and Means

“This matter returns to the Board following a February 26, 2020 Community Advisory Council meeting and the March 4, 2020 Policy Board meeting, each of which was conducted in compliance with public notice requirements and with the full opportunity for public input.”

June 10 Staff Report

Policy Board of Directors
Wednesday, March 4, 2020
10:30 AM

AGENDA

12. Receive Report and Provide Direction Regarding Proposed
Allocation of Greenhouse Gas Free Attributes (Action Item)

[Note: Nuclear Not Even Mentioned]

At the March Policy Board meeting, there were several statements made that many MBCP consumers would be very upset with the proposal to accept the nuclear offer from PG&E, and so the Board should approve it before the public learned of the proposal, and then mount a PR campaign to sell the decision after the fact.

Once the decision became public, and substantial public dismay resulted, repeated requests by Mothers for Peace for reconsideration to be placed on the agenda of the CAC and Policy Board received no response. They had to make the requests again and again. Their requests for written explanation of the changing staff cost estimates have still not been met.

This is “no way to run a railroad.” Nor for an entity that was supposed to be an alternative to PG&E, and based on community choice.

This needs to be fixed, by **reversing the decision and taking time for consultation with stakeholders and attempting to reach an honorable consensus consistent with MBCP's mission.**

CCA'S THAT HAVE REJECTED THE NUCLEAR OFFER:

Peninsula Clean Energy

Marin Clean Energy

East Bay Community Energy

Sonoma Clean Power

Clean Power SF

Valley Clean Energy

Redwood Coast Energy Authority

Agency*	Did the CCA take the Nuclear?
CCA - CleanPowerSF	NO
CCA - East Bay Community Energy	NO
CCA - Marin Clean Energy	NO
CCA - Peninsula Clean Energy Authority	NO
CCA - Redwood Coast Energy Authority	NO
CCA - Sonoma Clean Power	NO
CCA - Valley Clean Energy Alliance	NO
CCA - San José Clean Energy	Yes
CCA - Silicon Valley Clean Energy	Yes
CCA - Pioneer Community Energy	Yes

*No Information available regarding King City Community Power

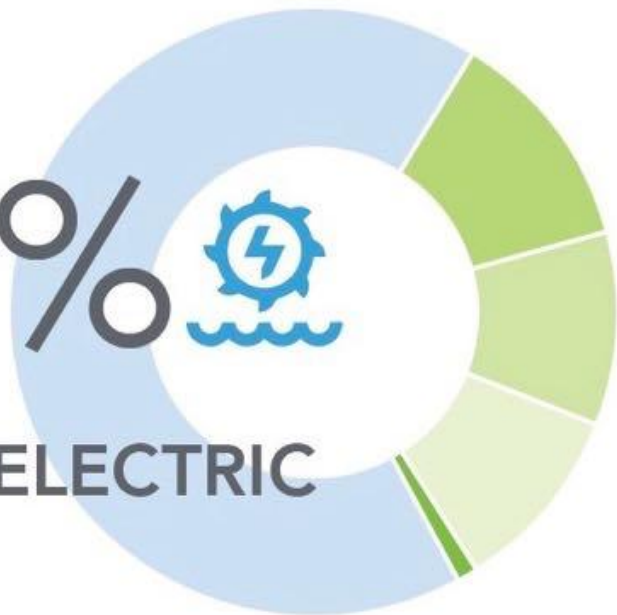
There is a substantial reputational cost to MBCP/CCCE if the nuclear offer is accepted under these circumstances. The “good will” asset could be significantly hit.

Consumers, if they feel MBCP/CCCE is little different than PG&E, might opt out. Localities that are considering joining MBCP/CCCE could choose not to; localities that joined based on the representation that it doesn't take nuclear might reconsider.



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Wind	11%
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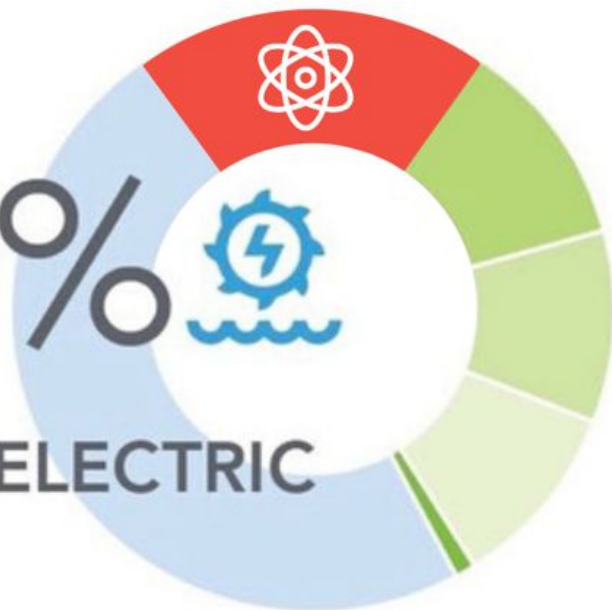
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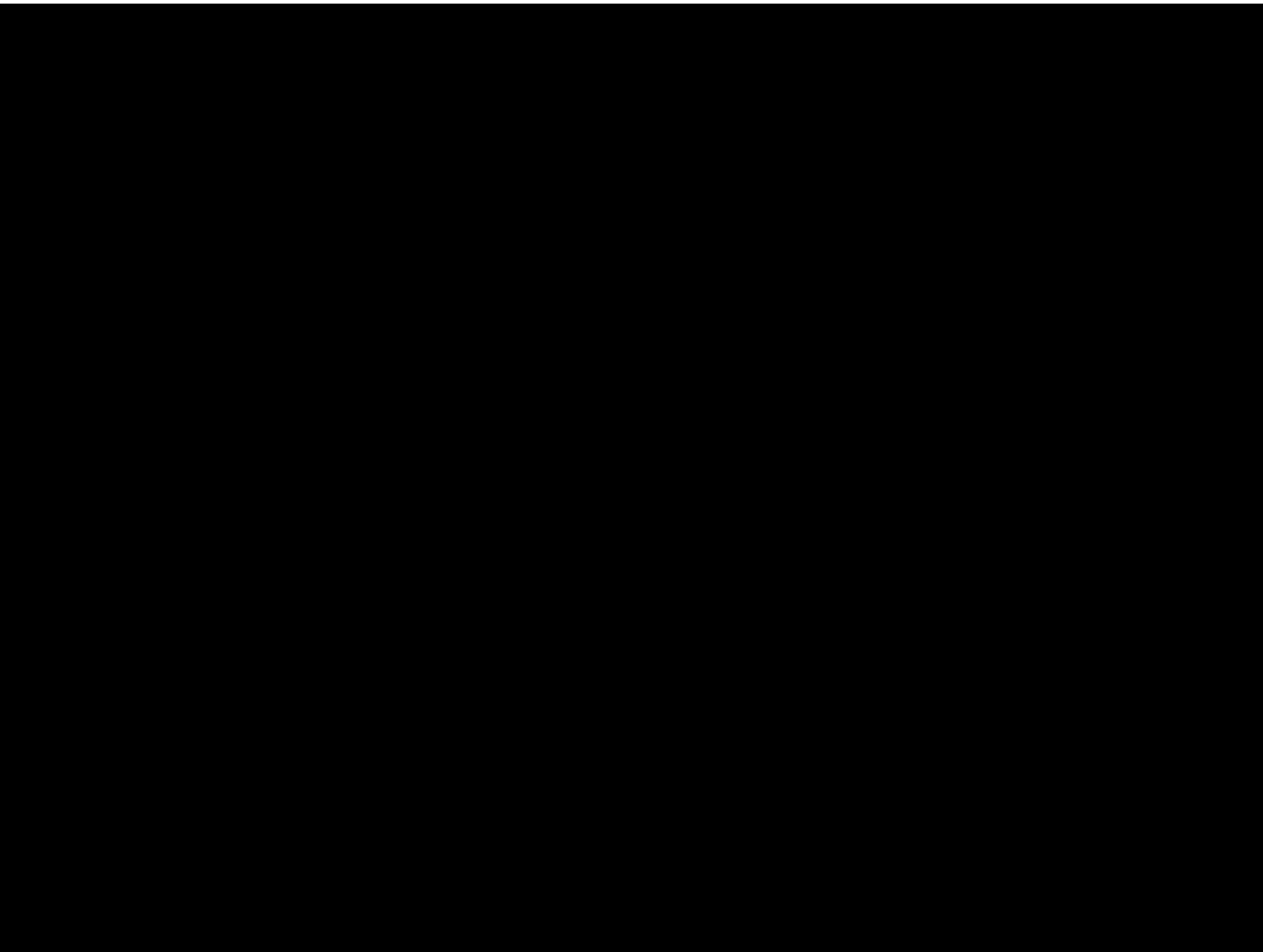


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Solar	11%
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The “soul” of MBCP/CCCE is
**CLEAN POWER, COMMUNITY
CHOICE.**

Do not sell that soul. 50 cents a
month is not worth it.

20%

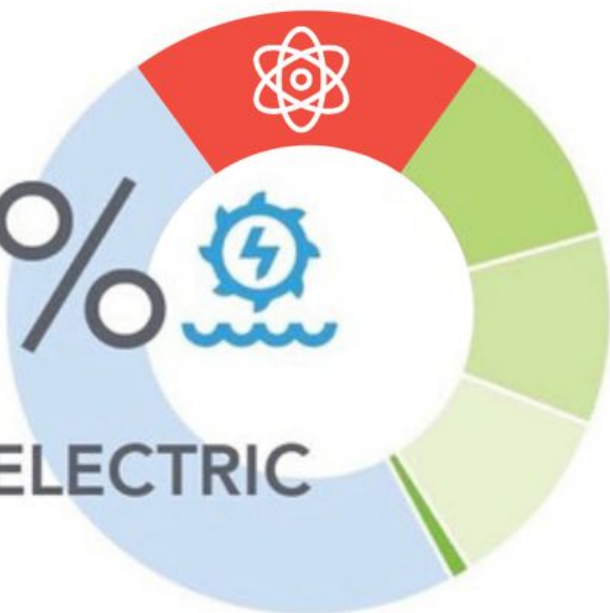
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