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Palisades Nuclear Plant and Big Rock Point Plant Consideration of Approval of Transfer of Control of Licenses and Conforming Amendments

Comment On: NRC-2021-0036-0001

Palisades Nuclear Plant and Big Rock Point Plant Consideration of Approval of Transfer of Control of Licenses and Conforming Amendments

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General Comment

Attached is a 23-page listing of Kalamazoo Gazette newspaper headlines having to do with Consumers Power Company, the then owner of Palisades and Big Rock Point nuclear power plants, with dates ranging from January 2, 1972 to May 8, 1991.

Eight separate attachments, each covering 2-3 pages of the 23-page document, were required, because of the large size (50+ Megabytes) of the entire 23-page document, given your regulations.gov size limit per attachment.

The index was provided to me by Kay Cumbow, a long-time Palisades and Big Rock Point citizen watchdog in Michigan, affiliated with multiple grassroots organizations over several decades. Many of the articles have to do with Palisades, and some have to do with Big Rock Point. I request that you search through them for articles having to do with radioactive releases at either Palisades or Big Rock Point. That would provide further evidence re: where radioactive contamination at these nuclear power plant sites is, that still needs to be cleaned up, in order to protect the Great Lakes, and all people and other living things that call them home.

Please note that Big Rock Point operated beginning in 1962, so those years of operations also need to be accounted for. There may be other newspapers of record, besides the Kalamazoo Gazette, such as the Traverse City Record Eagle, and others even closer, as in Petoskey, where records of radioactive contamination incidents at Big Rock Point are recorded.

In addition, Big Rock Point kept operating after 1991, till August 1997, when it entered its decommissioning phase.

Palisades, of course, also continued operating after May 1991 -- right up to the present actually. So

additional Kalamazoo Gazette (which later changed its affiliation and name to MLive) article archives should be searched. One way to do this would be at the following online database, provided by the Kalamazoo Public Library (KPL): <<https://kzpl.sirsi.net/uhtbin/cgisirsi/x/x/CENTRAL/60/1182/X>>

Search terms such as <Palisades> or <nuclear> could yield results. The local reference room at the KPL may also prove very valuable, such as its microfiche and microfilm collections.

The point is, the U.S. Nuclear Regulatory Commission is mandated to protect public health, safety, security, and the environment. The NRC should be very concerned with the radioactive contamination at both the Palisades and Big Rock Point nuclear power plant sites, where it is located, and making sure it is completely cleaned up, no matter how deep down beneath the current ground surface level it goes, and even if it extends beyond Palisades and Big Rock Point's property lines, such as into Lake Michigan itself. Any source of information that could provide insights or shed light on those vital questions and pursuits must be carefully examined, including local newspaper coverage of the infamous Operating Experience (OE) at both atomic reactors.

NRC's own dockets on both reactors should be exhaustively searched. In the past several weeks alone, a thousand or more documents -- most more than 25-years old -- have appeared in the Palisades docket at NRC ADAMS. These documents, too, should be carefully scrutinized by NRC staff. And whichever company that owns Palisades and Big Rock Point, going forward, and whichever companies that do the decommissioning (facility dismantlement and radiological cleanup) work at Palisades, should be required, by NRC, to completely clean up any and all radioactive contamination at the site.

Even the Big Rock Point site should be carefully re-examined for lingering radioactive contamination. We fear significant, hazardous radioactive contamination remains at the Big Rock Point site, even today. Please see the 11/30/2006 report entitled "Say Yes to Michigan, Say No to the 'Plutonium State Park': Background on Big Rock Point Nuclear Power Plant." It documents over 3 million curies of radioactivity released into the environment by Big Rock Point, by its own admission, as long documented in documents in NRC's possession. These massive releases did not disappear into nothingness. Some of them could still contaminate the Big Rock Point site. Some of them may have migrated off-site, but are still nearby. The site and its environs should be carefully examined for lingering radioactive contamination. This includes the Big Rock Point subsurface, below the arbitrarily and capriciously shallow cut off point that NRC allowed then owner Consumers Energy, and its decommissioning contractor British Nuclear Fuels, Ltd., to call it a day at. As documented in the report, Big Rock Point had significant spills, leaks, and operational radioactivity releases, that were never adequately cleaned up, far from it, even though decommissioning was declared finished in 2006, and NRC even has gone so far as to release the site for unrestricted use.

In short, these sites are like crime scenes. Forensic investigation is called for. Lingering contamination must be completely removed.

Attachments

1 to 3

4 to 6

7 to 9

10 to 12

13 to 15

16 to 18

19 to 21

22 to 23

11 30 06 Big Rock backgrounder 2 27 2007.doc - bigrockbackgrounder272007

CONSUMERS POWER COMPANY

X State cuts electricity rates 2.3 percent
Nuke plant 'worst' list includes Palisades
Area farm has '60 Minutes' of fame
Consumers irks little utilities
Kelley fights proposed Consumers charge
Citizens group to fight power line
Customers to pay Consumers' nuclear plant expenses
Attorney General blocks sale of Palisades, again
Al Sabo trees to be trimmed by hand
Viewpoint: Consumers answers AP article
Palisades generator replacement on schedule
Tree trimming still causing a current rage
Residents worried about Palisades nuclear plant
Consumers withdraws bid for more storage
Consumers to interrupt power to 2,400
Viewpoint: Consumers targets reliability
Electricity rates remaining stable
X Palisades ordered to reinstate fired whistleblower
Palisades to send out emergency preparedness ...
Letters: Consumers trees
Consumers' Midland assets frozen
Letter: Editorial was wrong about Al Sabo
Consumers' Gas line trench sets off new dispute
Consumers moves gas main to rescue trees
No one takes gas leak's main blame
Confusion led to gas main break
Editorial: Consumers Power Co. should plant trees
Residents, Consumers Power at odds over replanting
Westinghouse new partner in Palisades
Palisades to close for six months
Utility seeks rate hike for N-plant shutdowns
Palisades plan to be July topic
Consumers names manager
Disaster drill at Palisades Nuclear Plant
Communications center plan set at Lake Mich. Coll.
Consumers Power scores high, Van Buren low
Palisades listed as 8th worst nuclear offender
Years in works, Midland energy plant is dedicated
Panel proposes Al Sabo tree plan
Power outage slows traffic, leaves mall in dark
Kelley takes utility to court
Consumers to contest Kelley action
Cook & Palisades nuclear plants each fined \$75,000
Spring re-planting planned for Al Sabo
Consumers' future hinges on success
NRC studying 'valve incident' at Palisades
Union blames costs cuts for Al Sabo tree clearing
Clear-cut of Al Sabo trees stuns officials
Editorial: Tree-trimming deal a happy compromise
Tree-trim proposal scaled back
Consumers will analyze your home energy
X Group criticizes Palisades plant
Foes call plan to trim trees 'radical'
Consumers Power manager promoted
Gas leak delays downtown business openings
Midland plant requests co-generation status
Palisades plant gets top grades from commission
Utility company closer to sale of nuclear plant
Viewpoint: Consumers Power not delaying projects
Palisades Nuclear Plant to get fix-up
Viewpoint: Consumers Power stalls power
Viewpoint: State needs reliable power
Consumers gas customers to get refunds
Palisades Nuclear Plant cited for five violations
Supplier criticizes Consumers Power rejection
Feds OK review of sale of Palisades Nuclear Plant
Feds consider Palisades sale
Consumers vs. the state in a real power struggle
Consumers to appeal a limited power boost
PSC awaits reports on Consumers Power Co.
Consumers says all bets off if Midland fails

KG 05/08/1991 A,001:1
KG 04/25/1991 C,004:1
KG 04/05/1991 C,001:1
KG 03/28/1991 A,010:1
KG 02/26/1991 C,008:3
KG 01/10/1991 C,005:2
KG 12/20/1990 A,001:2
KG 10/25/1990 C,007:9
KG 10/18/1990 D,001:2
* KG 10/03/1990 A,005:4
KG 10/01/1990 C,002:1
* KG 09/17/1990 C,001:2
KG 09/14/1990 C,003:1
KG 09/12/1990 B,006:4
KG 09/10/1990 C,002:1
* KG 09/02/1990 A,007:1
KG 09/02/1990 E,001:2
KG 08/31/1990 A,008:1
KG 08/23/1990 C,004:4
KG 08/17/1990 A,007:1
KG 08/03/1990 C,006:2
KG 08/02/1990 A,015:2
KG 08/01/1990 B,002:5
* KG 07/31/1990 A,001:2
KG 07/25/1990 B,003:1
KG 07/24/1990 C,003:1
KG 07/20/1990 A,006:1
KG 07/19/1990 A,001:4
* KG 07/19/1990 C,008:1
KG 07/12/1990 C,006:1
KG 06/30/1990 A,001:4
KG 06/19/1990 C,004:1
* KG 06/11/1990 C,005:1
* KG 05/27/1990 E,001:1
KG 05/27/1990 E,002:1
KG 05/26/1990 A,001:2
KG 04/13/1990 B,010:3
KG 04/10/1990 A,001:1
KG 03/29/1990 B,005:3
* KG 03/24/1990 A,001:2
KG 03/20/1990 B,014:1
KG 03/16/1990 B,012:1
KG 03/06/1990 B,010:1
KG 02/27/1990 B,001:1
KG 02/12/1990 E,001:1
KG 01/23/1990 E,004:2
* KG 01/20/1990 A,001:2
* KG 01/18/1990 A,001:1
KG 01/14/1990 A,010:1
KG 01/11/1990 A,001:3
KG 01/07/1990 C,004:1
* KG 01/04/1990 B,002:1
KG 01/03/1990 A,001:1
KG 12/26/1989 B,005:1
KG 12/18/1989 A,001:1
KG 11/30/1989 B,014:1
KG 11/22/1989 E,001:1
KG 10/24/1989 E,001:4
KG 10/23/1989 A,005:3
KG 09/20/1989 A,001:2
* KG 09/20/1989 A,009:1
* KG 09/20/1989 A,009:2
KG 08/31/1989 B,011:1
KG 08/23/1989 E,001:4
* KG 08/10/1989 B,014:1
KG 06/29/1989 B,014:1
KG 06/28/1989 E,001:1
KG 06/23/1989 E,001:1
KG 06/22/1989 B,014:2
KG 05/23/1989 E,001:1
KG 05/18/1989 B,018:1

CONSUMERS POWER COMPANY

X Inspectors find cooling system flaw at plant
Consumers threatens court over Midland plant plan
James River plan off list of Consumers plants
Hot summer could mean brownouts
State may block Palisades sale
Consumers seeks Palisades sale
Fishermen like fish kills better than fish net
Critics say PSC ruling unfair
Power users face increase
Consumers fined for safety problem
Revived: Deciding when to resume dividends
Palisades: a view from the inside
Problems at N-plant blamed on sloppiness
Consumers pays \$150,000 fine
Allegan hills hide gas to burn on cold nights
Consumers faces Palisades fine
Palisades Nuclear Plant is back on line
Palisades among plants receiving counterfeit parts
Consumers appoints three district managers
Palisades down again
Palisades plant is back online after refueling ...
Fish barrier isn't likely to end feud at plant
Utility honors its life-saver
Sparks fly over blackout repairs
X Radiation hits Palisades crew
Kelley blasts plan to build fish net
Power companies agree to install net to protect
They solved mystery of discontented cows
Grades better at Palisades
Pump plant costly with or without fish kills
Opinion: Caution needed as we consider energy need
Grades for Palisades improved
Heat could validate power company claim
Utility alters Palisades deal
Palisades shut down until December
Old problem returns to shut down Palisades N-plant
Consumers Power chief comes home with upbeat words
Nuke plant safety check includes 2 in Michigan
Consumers Power may build resort
Palisades closer to sale
\$400,000 given man who stepped in hole
Palisades report by Nader group generating heat
Cook plant review favorable
Midland plant generating controversy, not energy
Palisades has new manager with training emphasis
Palisades manager appointed
New Palisades manager appointment is expected
Kalamazoo native heads new cadre at Consumers
Manager of Palisades plant moves up at Consumers
Electric customers speak against Consumers plan
Utility OKs buying cogenerated power
County COG continues in Midland case
New utility president has local roots
Changes at the top for energy firm
Paper plant project prompts power play
Nuke disaster test turns 'what if?' into
... at Palisades, findings 'good news'
Palisades back to full power
Plumbing woes don't deter Palisades
Correction
Consumers Power Co.'s parent company to move
MUCC president praises Ludington net rejection
State rejects plan to save fish from plant
Palisades plant sold
Panel fuels rate hike bid for Midland nuke plant
Delay, but Palisades plant deal is still 'go'
Consumers Power strategy is no secret: diversity
Utility's plan to save fish nets skepticism
Leak shuts down Palisades plant
Anti-nuclear plant group points to problems
Utilities sued over fish kills

KG 05/09/1989 B,004:1
KG 05/03/1989 E,001:4
KG 05/02/1989 B,006:1
KG 05/01/1989 B,008:1
KG 03/30/1989 A,001:4
KG 03/16/1989 B,012:1
KG 03/09/1989 B,011:1
KG 02/01/1989 B,005:3
KG 01/31/1989 A,001:1
KG 01/26/1989 B,014:3
KG 01/25/1989 B,006:1
* KG 01/22/1989 H,001:1
KG 01/13/1989 B,001:3
KG 01/09/1989 B,005:1
KG 01/05/1989 B,005:1
KG 01/04/1989 B,006:1
KG 12/28/1988 E,001:1
KG 12/21/1988 B,001:5
* KG 12/16/1988 B,012:1
KG 12/06/1988 B,001:4
KG 12/02/1988 B,004:1
* KG 11/27/1988 G,004:1
* KG 11/21/1988 B,001:1
KG 11/18/1988 B,001:1
KG 11/15/1988 A,001:3
KG 11/08/1988 E,003:1
KG 10/28/1988 B,005:3
* KG 09/28/1988 A,001:4
KG 09/13/1988 B,008:1
KG 09/09/1988 B,006:4
KG 08/30/1988 A,006:1
KG 08/26/1988 E,003:5
* KG 08/24/1988 A,001:3
KG 08/15/1988 B,005:1
KG 08/11/1988 B,012:3
KG 08/09/1988 E,001:1
* KG 07/06/1988 B,006:4
KG 06/29/1988 E,003:1
KG 06/20/1988 B,005:5
KG 06/14/1988 B,008:1
KG 06/02/1988 B,003:1
* KG 06/02/1988 B,014:1
KG 06/02/1988 B,014:2
* KG 05/19/1988 B,014:1
* KG 04/23/1988 A,003:4
KG 04/15/1988 B,006:4
* KG 04/11/1988 B,005:1
* KG 04/07/1988 B,003:1
* KG 04/07/1988 B,012:1
KG 03/31/1988 B,012:1
KG 03/22/1988 B,001:2
KG 03/11/1988 B,001:5
* KG 03/09/1988 A,001:1
KG 03/08/1988 B,006:3
KG 03/07/1988 B,001:1
KG 02/22/1988 B,001:1
* KG 02/09/1988 C,001:1
KG 01/30/1988 A,003:3
KG 01/27/1988 B,005:1
KG 01/18/1988 B,005:3
KG 01/17/1988 F,009:1
KG 01/09/1988 A,010:2
KG 01/06/1988 B,005:1
* KG 01/01/1988 E,001:1
KG 12/31/1987 A,001:1
KG 12/30/1987 B,001:6
KG 12/20/1987 I,002:1
KG 12/18/1987 B,008:4
KG 12/05/1987 A,003:3
KG 11/11/1987 B,011:1
KG 11/10/1987 A,001:6

CONSUMERS POWER COMPANY

Consumers wants rate case expedited
Nuke no more
Palisades plant sale fueling debate over rates
Palisades sold for \$550 million
Utility: Palisades will improve
NRC to critique Palisades plant
Consumers Power plants meet air standards
Palisades report called 'old'
Consumers names managers
Passing on Palisades costs opposed
Consumers Power gets bank help to convert
Consumers sets new staff, buys back stock
Ruling on power plant fish kills lures praise
Palisades gets credit for decisive action
Consumers Power told to end plant's fish kills
Consumers Power appeals refund order from PSC
PSC orders Consumers Power to lower rates
Consumers Power pulls plug on local headquarters
Consumers Power Co. faces state cynicism
Consumers Power will cut back staff by 450
Consumers Power rebate ordered
Palisades called 'as good as ever'
Editorial: Consumers' wise course
Cartoon: Land sales to Michigan
Utility agrees to discuss land sale and fish kills
New Palisades plant manager digs in
Hoffman is central Michigan native
Citizens Lobby warns bill to boost electric rates
Consumers refuses to sell state 13,000 acres
Consumers Power has new parent firm
Fish kills at Ludington plant prompt gov't. action
Consumers Power rate hike not bright idea
Hubbard re-elected to Consumers Power Co. board
McCormick: Restructuring of utility will be done
Consumers Power will reorganize
Palisades gets new manager
Finally, help for entering 'the real world'
X Palisades nuclear plant gets a restart
Nuclear plant hopes tours will make it less scary
Palisades plant could restart in 'several days'
Palisades plant faces warm water woes
X Palisades plant starts up again
Consumers Power unsure when Palisades will restart
Consumers Power reaches settlement
X Faulty gauge won't hinder nuke start-up
X Palisades readings still unclear
Puzzling readings stall Palisades startup
Palisades gets NRC go-ahead
Bonuses paid in Consumers deal
'Bad attitude' at Consumers blamed for Palisades
Consumers Power wants to restructure
\$500,000 stolen from Consumers Power
PSC rejects rate formula urged by Consumers Power
X Palisades ready for restart if NRC gives approval
Utility lines up Midland partners
Midland, Consumers Power feeling good about pact
Critics worry about Midland power cost
Consumers Power, Dow reach agreement
Palisades plant restart debated
Newspapers lose bid for access
Consumers Power rebounds
U.S. buys Consumers Power land
Consumers Power is top-rated by Forbes
Environmental group says Midland elec. unnecessary
Nuke shutdown plan increases utility bill
PSC's Midland decision draws little reaction
Midland switch gets PSC support
Consumers Power: the comeback trail?
Kelley says he could support Consumer Power-Dow
Midland pact could turn liability into plus
Consumers, Dow reach accord

KG 11/06/1987 B,006:1
* KG 10/11/1987 E,001:5
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* KG 10/07/1987 A,001:4
KG 10/02/1987 D,001:3
KG 09/30/1987 E,001:3
KG 09/10/1987 B,016:3
KG 09/08/1987 B,005:4
KG 08/31/1987 B,006:1
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KG 08/20/1987 B,014:2
KG 08/14/1987 B,004:3
KG 08/13/1987 B,011:1
KG 08/12/1987 A,001:1
KG 08/12/1987 A,008:1
KG 08/05/1987 E,003:1
KG 08/04/1987 B,007:1
* KG 07/30/1987 A,001:4
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KG 07/20/1987 B,006:1
KG 07/17/1987 B,007:1
KG 07/06/1987 A,001:1
KG 06/16/1987 A,006:1
* KG 06/15/1987 A,006:1
* KG 06/12/1987 A,005:1
* KG 06/07/1987 E,001:1
KG 06/07/1987 E,002:3
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* KG 05/07/1987 B,015:1
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* KG 04/30/1987 B,001:1
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* KG 04/17/1987 C,001:1
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KG 04/01/1987 E,001:5
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KG 03/29/1987 B,001:6
KG 03/28/1987 A,001:1
KG 03/27/1987 B,001:4
KG 03/24/1987 E,003:1
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KG 02/27/1987 E,001:4
KG 02/24/1987 E,001:3
KG 02/19/1987 B,013:1
* KG 02/15/1987 A,001:2
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* KG 01/28/1987 E,001:1
KG 01/27/1987 E,001:5
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KG 01/12/1987 B,005:2
KG 01/01/1987 C,001:5
KG 01/01/1987 C,003:1
KG 12/30/1986 A,001:6
KG 12/11/1986 B,015:1
KG 12/03/1986 E,001:1
KG 10/23/1986 B,017:1
KG 10/22/1986 A,001:5
KG 10/07/1986 E,002:1
KG 09/23/1986 E,003:1
KG 09/18/1986 B,015:3
KG 09/17/1986 A,001:2

CONSUMERS POWER COMPANY

Palisades gets high marks in 'disaster' test	KG 09/16/1986 A,001:5
Utility threatens to close plant	KG 09/11/1986 B,015:1
Consumers Power to refund \$27 million	KG 09/09/1986 B,009:1
State sues utilities over plant fish kill	KG 09/04/1986 B,017:1
Group questions Midland plant need	KG 08/28/1986 E,001:4
X Palisades drug testing OK'd in federal court	KG 08/21/1986 E,001:5
Mock Palisades disaster tests response	* KG 08/20/1986 A,001:1
NRC to test plant's disaster plan	* KG 08/17/1986 B,001:1
State's economy tied to rate hike, aide says	* KG 08/12/1986 B,001:1
Utility rate dispute moves to appeals court	KG 07/21/1986 B,006:1
\$50,000 fine levied against Palisades	KG 07/10/1986 A,001:1
X NRC hits Palisades repair procedures	KG 07/08/1986 E,001:1
Utility ready to fund engineering for conversion	KG 07/08/1986 E,004:1
Palisades shutdown extended	KG 07/04/1986 B,002:1
Utility disputes attorney general's plant study	KG 07/01/1986 B,007:4
Report hits management of Palisades nuclear plant	KG 06/22/1986 A,001:5
Consumers Power still wants to convert nuke plant	KG 06/19/1986 B,014:1
PSC delays nuclear plant conversion	KG 06/17/1986 A,001:1
Kelley, utility battling over Midland plant again	KG 06/06/1986 B,005:1
Reports come out against nuke plant conversion	KG 06/05/1986 B,011:1
Palisades shutdown sparks NRC check	KG 05/23/1986 A,001:1
Midland plant conversion backed	KG 05/16/1986 A,001:4
Sides taken in nuke plant conversion	KG 05/15/1986 D,013:1
Consumers begins feasibility study	KG 04/17/1986 E,001:4
Top lawmakers endorse plan for Midland plant	KG 04/16/1986 E,002:1
For Consumers Power, the easy part is over	KG 04/16/1986 E,003:1
Citizens Lobby head: Consumers' Midland option	KG 04/14/1986 B,006:1
Utility requests rate hike for Midland conversion	KG 04/09/1986 E,001:1
Utility's Midland plan faces battle	* KG 04/08/1986 A,001:1
Much of Midland would be abandoned	* KG 04/08/1986 E,001:1
Midland rescue to cost \$434 million	KG 04/07/1986 A,001:1
Editorial: Finding the key to Midland revival	KG 03/30/1986 A,018:1
Experts expect Consumers to seek gas conversion	KG 03/27/1986 B,015:3
Consumers Power's drug testing begins	KG 03/16/1986 E,009:1
Palisades shuts down again	KG 03/13/1986 B,015:1
Union contests utility drug-test plan	KG 03/13/1986 B,015:3
Utility boosts economy, exec says	* KG 03/06/1986 B,002:1
Palisades resumes operation, gets mixed report	KG 03/05/1986 B,013:1
Consumers Power seeks to redeem more bonds	KG 03/05/1986 B,014:1
Palisades wins safety award	KG 03/02/1986 E,003:1
Palisades wins safety award	KG 03/02/1986 E,003:1
Energy program to generate help	KG 02/26/1986 B,002:1
Palisades start-up delayed because of hydrogen	KG 02/18/1986 B,006:2
Editorial: Consumers should push on at Midland	KG 02/09/1986 A,014:1
April report holds key to Consumers' Midland plant	* KG 02/06/1986 A,001:1
Judge OKs \$30-million utility refund	KG 02/06/1986 B,012:2
Power company's 'Eyes & Ears' will be watching	* KG 02/01/1986 A,004:1
Consumers hopes reduced power rates will spark	KG 01/22/1986 A,001:3
Street lights studied	KG 01/21/1986 B,003:3
Local firms spurn request for streetlight study	KG 01/19/1986 B,001:6
For a switch, Consumers is selling to Canadians	KG 01/12/1986 E,004:1
Consumers may trade ownership in nuclear plant	KG 01/11/1986 A,010:4
Palisades gets a tuneup	* KG 12/29/1985 G,001:1
City wants local help in street-light study	KG 12/24/1985 B,003:1
City hopes to save money by taking over system	KG 12/20/1985 B,001:1
Consumers cuts planned rate increase	KG 12/19/1985 B,012:1
Utility to swallow Midland loss	KG 12/10/1985 C,009:1
Beach washout no threat to Palisades power plant	KG 12/08/1985 B,008:1
Official says Consumers plans to reduce request	KG 12/07/1985 A,010:1
Consumers Power natural gas users getting refunds	KG 12/04/1985 B,013:1
Palisades nuclear plant shut down for refueling	KG 12/02/1985 B,008:1
Closing sought of 'largest fish killer on lakes'	KG 11/22/1985 B,004:4
Utility's gas customers may receive refund	KG 11/21/1985 B,014:1
Midland plant may convert to gas	KG 11/10/1985 E,011:1
Consumers Power on threshold of a new era	* KG 11/03/1985 D,001:1
Citizens group files suit over surcharges	KG 11/02/1985 A,010:1
Kelley still trying to overturn rate hike	KG 11/02/1985 A,010:3
New utility head will move quickly to make changes	KG 11/01/1985 B,007:1
Nuke plant to shut down temporarily	KG 10/27/1985 E,001:1
Palisades officials say exodus not hurting	* KG 10/27/1985 E,001:1
More impressive than atom splitting is security	* KG 10/27/1985 E,001:3

CONSUMERS POWER COMPANY

Consumers phone service for deaf
PSC nixes Midland nuke study
Consumers to take a new look at Midland plant
Consumers begins dismantling nuke plant
"It's going to be tight"
New Consumers head hopes for better relations
Detroit utility executive to head Consumers Power
Blanchard pulls plug on PSC head
Court will not unseal papers
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Attorney General files suit to block rate boost
PSC grants rate hike to Consumers
Utility could be forced into bankruptcy
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Lessons of Midland diverse
PSC alters Consumers Power's electric rates
PSC staff endorses rate hike
Utility gives refund, seeks rate-hike OK
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Consumers Power cuts staff, regions
PSC short-circuits Consumers rate hike
Utility closer to \$99 million hike
Consumers Power Co. shuffles managers
Consumers Power reaches agreement with creditors
Utility readies deals on debt
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Selby: 50% chance one unit of nuke plant finished
Consumers Power begins crackdown on rip-off scheme
PSC chief explains rate hike, stable utility bills
Utility directors vote to make 'diligent effort'
Consumers Power expected to OK bank repayments
Palisades breaks record
Consumers Power ready to assist customers
A better way to pay power plant bills
Utility hopes to lure Saturn by offering cut
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Utility, creditors close in on refinancing
Consumers selling 450 acres of scenic forest land
PSC attaches conditions to 6.4 percent hike
Consumers to cut gas price
Atomic energy ranks second as electrical source
Consumers will live, Selby says
Consumers president to receive \$120,000
Selby's resignation sparks call for purge
Official says \$30 million Consumer dividend
Consumers hopes to sell Grand Rapids plant
Consumers customers said facing costly service
Consumers Power says it will appeal assessment
Nuke plant shutdown raises tax questions
PSC staff calls for rejection of utility rate hike
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Program to aid low-income people renewed here
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They're already cutting costs
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Programs expanded
Judge won't forbid newspapers from publishing
Wall Street sees Consumers Power a prime candidate
Newspaper group will appeal judge's rejection
Bechtel attorney trying to keep list out of paper
Consumers Power, Dow lawyers in harsh exchange
Midland: Did they 'bet the company'?
Atom plant called victim of system
Edison succeeding where Consumers failed
Editorial: Consumers Power's monumental gall
Consumers Power changes needed, PSC official says
Utility's request would hike bills 35 percent
Consumers asks \$3.5 billion to pay plant debt
Oct 1 trial set for massive Consumers, Dow lawsuit
Consumers Power asks increase in negotiators
Hearing on suit to provide public access
Energy secretary cancels Wednesday talks
Consumers profit down; effort to revive talks
Talks next week aimed at reviving nuclear plant
Consumers Power nears natural gas supply
Wanted: Nuclear engineers, technicians
Case bigger than one following Three Mile Island
Sealed: Judge in nuclear plant case locks up
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Congressmen rule out assistance
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Consumers abandons Midland nuclear plant
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Consequences of rush to use nuclear power
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'Final offer' needs more support
Utility willing to swallow loss of \$1.2 billion?
Nuclear-plant talks intense; negotiators
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Kelley asked to save nuclear plant
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Nuke plant construction remains alive
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Consumers Power set to lay off 24 in area
Consumers asks rate hike of \$776 million
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Consumers loses money on Clinch River
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Average gas user will get \$26 credit
Electrical 'stew' draws ingredients from all over
Nader group rates managers of state nuclear plants
Palisades receives good 'report card'
Palisades part of Green Beret security check
Linemen taught how to get on top of things
Consumers Power union in agreement
Strike deadline extended by Consumers Power union
Palisades n-plant record 'best'
Consumers Power readies for strike
Consumers Power seeking lower rates to help
Increasing electricity use boosting output
Consumer's plant called 'one of worst-managed'
Consumers may resume construction
Portage gas leak sealed
Auger hits gas main in Portage
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Consumers' rating threatened
Dow may come back, Consumers say
Analysts concerned, but bankruptcy unlikely
Dow deals severe blow to Consumers
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Consumers 'optimistic'
Consumers announces stock sale
Customers may get refunds
Petition drive planned to block charges
NRC won't license Midland plant until sure is safe
Firms turning to oil may hike home gas costs
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Few voters showing up in Portage
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Electric, phone bills will reflect rate hikes
U.S. energy panel rule won't affect Consumers
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Consumers high-wire crews making a major move
PeopleCare project aids 247 in area
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Consumers says price rising on nuclear plant
PSC grants Consumers \$16.7 million increase
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Utility shareholders schedule vote to unite
Consumers helps pay for pro-nuclear campaign
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Consumers Power seeks buyer for Morrow Lake	KG 02/04/1983 A,001:1
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Gas line which failed tests repaired	KG 11/16/1982 D,010:1
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Citizens' group trying to block expensive gas	KG 07/04/1982 F,001:1
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Consumers cleared in suit	KG 06/15/1982 C,009:5
Kelley sues to halt Consumers hike	KG 06/12/1982 A,002:3
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Palisades nuclear plant gets "improved" rating	KG 04/14/1982 D,011:1
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Man files suit in explosion at Palisades plant	KG 03/25/1982 D,001:5
Generator tube leak shuts down Palisades plant	KG 03/24/1982 C,008:1
Kelley charges Consumers with waste	KG 03/19/1982 A,001:1
Official asks for "realistic" utility regulations	* KG 03/10/1982 A,003:1
Editorial: For \$10, Consumers Power might save you	* KG 03/05/1982 A,004:1
Palisades starts service	KG 03/05/1982 D,003:6
Palisades holds emergency drill	KG 02/23/1982 A,009:3
Electric rates in Kalamazoo to rise in March	KG 02/18/1982 A,001:1
Nuclear plant has NRC approval	KG 02/17/1982 B,003:2
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Palisades could restart operation in two weeks	* KG 02/09/1982 D,001:1
Hurt worker: 'Right place, wrong time'	KG 02/08/1982 A,003:1
Consumers Power hoping to hurry Palisades restart	KG 02/06/1982 B,012:1
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Explosion in Palisades generator injures 1	KG 02/04/1982 A,001:4
Palisades' neighbors get emergency info	KG 02/03/1982 D,001:5
Consumers Power earnings off almost 25%	KG 01/29/1982 C,005:5
Palisades siren system to sound off	KG 01/28/1982 A,001:3
Court upholds bond sale	KG 01/27/1982 D,012:1
Consumers wins rate hike OK on PSC split vote	KG 01/26/1982 B,003:1
Proposed fine would set a record	KG 01/25/1982 A,003:5
Consumers atomic plants set record	KG 01/23/1982 A,003:4
Palisades's nuclear warning system to be tested	KG 01/17/1982 B,008:1
Nuclear plant costs up by \$290 million	KG 01/07/1982 B,003:1
Consumers accused of deception	KG 12/29/1981 B,003:1

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Consumers encourages retirement	KG 12/27/1981 G,012:1
Consumers Power electric bills to drop next month	KG 12/23/1981 D,003:4
Utility plans carefully for winter	KG 12/20/1981 G,001:6
No more gas cost cuts expected from utility	KG 12/16/1981 A,011:3
Energy in motion	* KG 12/10/1981 A,014:6
Paw Paw family sues Consumers Power Co.	KG 12/05/1981 A,010:1
December electric rate to rise for customers	KG 12/03/1981 B,006:1
Editorial: Consumer Power misled public and press	KG 11/18/1981 A,006:1
Viewpoint: Consumers Power caught in deception	* KG 11/18/1981 A,007:1
Consumers Power halts work, hits attorney general	KG 11/18/1981 B,009:3
Kelley hits Consumers letter writing tactics	KG 11/16/1981 D,011:2
Consumers Power stock on sale	KG 11/13/1981 C,006:5
Shot-out insulators plague electric utility	KG 11/11/1981 B,007:1
Second phase of Palisades warning system	* KG 11/09/1981 C,007:1
X Palisades shutdown extended	KG 11/07/1981 A,002:5
Palisades outage extended	KG 10/28/1981 C,003:5
Consumers Power earnings off 3.4%	KG 10/23/1981 C,007:5
Consumers Power says some gas bills to be reduced	KG 10/22/1981 A,004:1
Delay seen in hike in natural gas costs	KG 10/20/1981 A,001:3
Consumers Power set to sell Midland bonds	KG 10/17/1981 A,002:1
Supreme Court OKS bond sales by utilities	KG 10/16/1981 B,011:1
Utility hails home energy audits	* KG 10/11/1981 G,001:1
Electric bills are on the rise	KG 10/02/1981 B,009:1
New Consumers power plant in Ottawa Co. open	KG 10/01/1981 D,001:1
'Lifeline' electric rates to take effect	KG 09/27/1981 G,001:3
Corrosion tests under way at Palisades plant	KG 09/22/1981 B,002:1
Ferency vows to win suit against Consumers Power	KG 09/22/1981 B,003:4
Palisades says NRC report 'dated'	KG 09/21/1981 B,003:1
4,000 may lose jobs	KG 09/16/1981 C,003:1
PSC division head defends Consumers gas purchase	KG 09/15/1981 B,003:1
Rating list old, Palisades officials say	KG 09/14/1981 D,005:1
Consumers Power says 'lifeline' could save	KG 09/10/1981 B,002:1
'Lifeline' rates established by PSC	* KG 09/09/1981 A,001:1
Palisades can't laugh at fears of terrorism	KG 08/30/1981 B,012:1
X Palisades down for refueling	KG 08/29/1981 A,002:1
Nuclear agency gives Palisades safety OK	KG 08/28/1981 D,001:3
Algerian gas deal 'not bad'--Selby	KG 08/26/1981 C,003:1
Customers get reprieve on gas bills	KG 08/26/1981 C,006:4
Utility's van offers tips on saving energy	KG 08/23/1981 B,003:1
Consumers not getting rate increase reward	KG 08/13/1981 B,003:3
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Fight over gas prices taken to federal level	KG 08/07/1981 B,010:1
Kelley to block Consumers bond sale	KG 08/05/1981 C,003:1
Consumers given OK to sell bonds	KG 08/04/1981 B,002:1
Consumers Power names area public affairs director	* KG 07/31/1981 B,009:1
X New repairs stall return of Palisades plant	KG 07/29/1981 D,003:2
Michigan to fight hike in Algerian natural gas	KG 07/25/1981 A,001:5
Consumers bills to go up again in August	KG 07/23/1981 A,001:3
Shazam! This van really hums	* KG 07/23/1981 D,011:4
Consumers Power: Rate hikes a hedge against future	KG 07/19/1981 C,011:1
Natural gas from Algeria costly	KG 07/19/1981 C,015:1
Groothuis ends career at Consumers	* KG 07/17/1981 A,003:1
Consumers criticized on Midland site	KG 07/17/1981 A,004:1
PSC gets an earful on gas rates	* KG 07/14/1981 B,003:1
Consumers to foot bill in plan to monitor cavern	KG 07/13/1981 B,003:1
Palisades plant repairs to end operating record	KG 07/11/1981 A,002:3
Ferency jumps into Consumers gas rate fray	KG 07/10/1981 A,004:1
Gas bill totals can't be predicted accurately now	KG 07/08/1981 A,001:1
Gas decontrol would send bills soaring--Consumers	KG 07/07/1981 B,003:3
Officials probe cause of false alarm at Palisades	KG 07/06/1981 A,004:1
Consumers seeks major increase in electric rates	KG 07/03/1981 B,003:1
Consumers' fine cut in open-valve case	KG 07/01/1981 B,008:1
Home energy plan ready	KG 06/28/1981 C,020:1
Consumers fined for coal dumping	KG 06/27/1981 A,004:2
Consumers wins two rate increases	KG 06/25/1981 A,001:5
NRC team to visit Palisades plant	KG 06/23/1981 B,003:5
Testing sirens' song	* KG 06/19/1981 D,001:5
Energy-saving plan to begin July 1	KG 06/16/1981 A,008:1
Consumers bills to rise 70 percent, Kelley says	KG 06/16/1981 C,012:1
Editorial: Exorbitant natural gas prices	KG 06/15/1981 A,004:1
'No way to block' higher costs	KG 06/11/1981 B,011:1

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'Deal' with Algeria hiked gas prices	KG 06/11/1981 C,009:5
Consumers 'welcomes' hearing on rates	KG 06/10/1981 B,007:1
Valley to fight gas price hike	KG 06/03/1981 B,003:1
Gas deal means higher prices for customers	KG 06/02/1981 D,003:1
Consumers ordered to give 'lifeline' rates to poor	KG 05/28/1981 B,004:1
Michigan could get refunds	KG 05/27/1981 A,010:1
Morrow plant to remain open	* KG 05/17/1981 C,015:4
Economic zap on nuclear power	KG 05/11/1981 A,003:5
Consumers Power gas bills to increase up to 50%	KG 05/06/1981 A,001:3
'Beaks' put the bite on 400-ton transformer	* KG 04/29/1981 A,003:1
Consumers' spokesman says strike shows nuclear need	KG 04/25/1981 A,003:5
Insulation loan plan OK'd by PSC	KG 04/21/1981 B,003:1
Home insulation loan program nears	KG 04/20/1981 A,001:3
Consumers Power to ask rate hike	KG 04/16/1981 B,003:5
Thieves posing as repairment steal man's money	KG 04/16/1981 B,004:2
Pickets protest rates at Consumers Power	KG 04/10/1981 D,001:1
Power customers get cutback in bill totals	KG 04/01/1981 D,004:3
Consumers criticized for Palisades errors	KG 03/14/1981 A,002:5
Natural gas bills jump this month	KG 03/11/1981 A,001:1
Consumers plans \$40 million control center	KG 02/23/1981 A,009:1
A safe, clean source of power, advocates contend	* KG 02/22/1981 C,015:1
Michigan natural gas prices could take huge jump	KG 02/20/1981 A,006:4
Consumer Power subleases ISB 'white elephant'	* KG 02/19/1981 A,008:1
Consumers finds PCB in gas line unit	KG 02/17/1981 C,010:3
NRC issues new order on Palisades	KG 01/16/1981 D,005:4
Consumers says survey shows its gas prices low	KG 01/15/1981 B,002:1
Protests convinced utility to alter plan	* KG 01/13/1981 A,001:5
Consumers to reopen some offices	KG 01/12/1981 A,008:4
Consumers to detail dock proposed for Palisades	KG 01/10/1981 A,005:5
Utility sued in electric line accident	KG 01/09/1981 A,012:3
NRC proposes \$38,000 fine against Consumers	KG 01/08/1981 B,003:5
Dosimeters track radiation dangers at Palisades	KG 01/02/1981 B,002:1
Consumers given power rate hike, will make refunds	KG 12/31/1980 A,007:4
Consumers wants local governments to share cost	KG 12/21/1980 B,016:1
U.S. agency criticizes safety record at Palisades	KG 12/18/1980 D,001:1
Palisades nuclear plant back in service	KG 12/18/1980 D,001:3
Accident-response drill for Palisades	KG 12/11/1980 D,001:1
Offices needed, but not by Consumers	* KG 12/04/1980 A,003:1
NRC rates Palisades below average for Midwest	KG 12/03/1980 B,002:1
Preparing for mishap at Palisades	* KG 11/30/1980 B,014:1
Consumers to close 26 pay stations	KG 11/29/1980 A,003:1
Palisades gets health physicist	KG 11/19/1980 A,005:6
OK warning system for Palisades	KG 11/18/1980 B,002:2
Consumers' Midland plant expense revised	KG 10/17/1980 A,010:5
Consumer pays Palisades fines	KG 10/14/1980 D,012:3
Power company's tests had mixed results	* KG 10/08/1980 E,006:1
Consumers nuke plant opposed	KG 10/02/1980 A,007:3
NRC proposes \$5000 fine against utility	KG 09/29/1980 D,005:1
Consumers says Palisades incidents no area threat	KG 09/19/1980 A,009:5
Consumers fined again for Palisades violations	KG 09/18/1980 B,012:1
Palisades workers stage brief walkout	KG 09/12/1980 D,004:1
Palisades plant back in operation	KG 09/03/1980 B,002:3
Palisades plant down again	KG 08/27/1980 A,013:1
Nuclear power called 'safe'	* KG 08/14/1980 A,003:1
Corrosion slows, Consumers delays Palisades	KG 08/10/1980 A,004:1
Consumers granted rate hike	KG 08/09/1980 A,010:1
Electrical rate hike approved	* KG 08/08/1980 A,001:6
Probe of gas leak set	KG 08/04/1980 B,005:4
Radioactive gas accidentally released at Palisades	KG 08/03/1980 A,001:1
Palisades reports foulup with control room switch	* KG 07/30/1980 D,001:1
Consumers ordered to shave electric rates	KG 07/26/1980 B,005:1
'Gotta get lights back on'	* KG 07/22/1980 A,001:1
Upset Forest St. residents still lack electricity	* KG 07/21/1980 D,003:1
'Bureaucratic mess' blamed for mess on Forest St.	* KG 07/19/1980 A,003:1
Record power loss spurs ice sales	KG 07/18/1980 A,001:1
Thousands without power	* KG 07/17/1980 A,001:1
Ice sells like hotcakes	KG 07/17/1980 D,001:3
Consumers' mothballing of plant hit	KG 07/10/1980 B,003:4
Consumers sets dates for Midland units	KG 07/04/1980 A,005:4
Palisades power plant down for maintenance	KG 07/04/1980 D,002:1
Consumers won't trade him even	KG 06/22/1980 C,011:1

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Faults discovered in nuclear design	KG 05/30/1980 B,003:5
Modified Palisades back in service	KG 05/29/1980 B,002:1
Consumers Power bills down in June	KG 05/29/1980 B,003:5
2,500 of 16,000 homes still without power	* KG 05/14/1980 B,001:3
Consumers Power crews work to restore electricity	KG 05/14/1980 X,010:1
Nuclear plant cost problems aired	KG 05/08/1980 A,001:5
Consumers wants hike of \$129 million	KG 05/06/1980 A,009:1
Consumers' rate increase bid slashed	KG 04/25/1980 B,006:6
Kelley, citizens lose fight for financial data	KG 04/16/1980 A,014:1
Viewpoint: Insulation financing plan	KG 04/13/1980 A,007:1
NRC halts duct contractor at Midland project	KG 04/03/1980 C,015:1
Second fire hits Midland nuclear site	KG 03/26/1980 B,010:3
Vandals cause blackout	* KG 03/20/1980 A,003:1
NRC aware of Palisades turbine cracks	KG 03/11/1980 A,009:1
Editorial: Decision illustrates national dilemma	KG 03/09/1980 A,006:1
Power firm faces rocky road	KG 03/09/1980 C,015:2
Consumers Power says it wouldn't go nuclear now	KG 03/07/1980 A,004:1
Consumers to complete Midland plant	KG 03/06/1980 A,009:1
Consumers weighs fate of nuclear plant at Midland	KG 03/04/1980 B,003:1
Big Rock nuclear plant safety needs evaluated	KG 02/29/1980 A,004:3
Consumers Power loses tax decision	KG 02/22/1980 B,006:4
Big Rock protest group appeals conviction	KG 02/16/1980 B,010:1
Nuclear moratorium would be disastrous	KG 02/12/1980 B,010:1
Radiation leak probed at Big Rock	KG 02/08/1980 D,012:4
Settlement ends gas explosion case	KG 02/06/1980 A,005:1
Utility seeks \$1 billion for nuclear plant closing	KG 02/04/1980 B,005:1
* Palisades may be shut down until spring	KG 01/31/1980 A,008:4
Portage, Consumers agree to settlement	KG 01/31/1980 A,020:3
Power customers may have to pay cost overruns	KG 01/31/1980 B,003:5
Consumers' power rate to go down	KG 01/31/1980 B,003:6
Costs soar on Midland nuclear plant	KG 01/29/1980 B,003:3
Consumers Power asks gas rate hike	KG 01/26/1980 A,004:5
Insulation loan plan 'up in air'	KG 01/25/1980 D,012:5
Consumers improving its gas network	KG 01/23/1980 C,014:6
Nuclear plant shutdown cost claimed \$1 billion	KG 01/22/1980 C,012:1
Big Rock nuclear plant 'experiments' protested	KG 01/09/1980 B,002:4
Citizen group fights power rate hike	KG 01/08/1980 B,003:1
Big Rock nuclear plant shut down	KG 12/31/1979 A,005:1
Weather warmer but bills continue to climb	KG 12/29/1979 A,007:1
Possible hazard cited at Midland nuclear plant	KG 12/27/1979 A,011:4
Consumers asks hearing on NRC order	KG 12/27/1979 B,011:4
Consumers has 20 days to appeal Palisades fine	KG 12/21/1979 C,008:2
Palisades plant down until next year	KG 12/18/1979 B,003:1
Big Rock plant to be shut down	KG 12/11/1979 C,012:3
NRC orders Consumers to halt Midland work	KG 12/07/1979 A,008:5
Consumers Power jacks up reward for gun vandals	KG 12/07/1979 C,010:3
Your electric bill is in line for a boost	KG 12/06/1979 A,001:2
Low-income customers can get aid for power bills	* KG 12/06/1979 A,003:1
Consumers seeks new rate hike	KG 12/05/1979 D,004:6
Nuclear protester 'guilty'	* KG 12/01/1979 A,003:3
Consumers Power expert disputes anti-nuke stats	KG 11/30/1979 A,007:1
Trespass trial starts	* KG 11/30/1979 A,010:1
Consumers protests Palisades fine	KG 11/30/1979 B,008:1
Consumers bills to take double jump	KG 11/28/1979 B,006:1
Consumers fights \$450,000 Palisades fine	KG 11/28/1979 B,006:1
PSC grants Consumers rate hike	KG 11/27/1979 C,022:4
Inefficiency kills Consumers' plea to hike returns	KG 11/21/1979 A,009:1
Consumers rate hike ruling near	KG 11/21/1979 A,009:4
Editorial: NRC against Consumers Power?	KG 11/13/1979 A,004:1
Consumers hit with stiff fine	* KG 11/10/1979 A,001:5
Big Rock radioactive water leak corrected	KG 11/08/1979 B,003:1
New shielding devices studied for Big Rock	KG 11/08/1979 B,012:3
Worker contaminated	KG 11/02/1979 A,001:2
Consumers electric bills to drop	KG 10/24/1979 D,006:3
Palisades gets a physical	* KG 10/21/1979 D,001:1
Reactor is plant's heart	* KG 10/21/1979 D,001:1
Dow, Consumers won't be fined for 'coverup'	KG 10/16/1979 B,002:1
NRC gives Palisades low mark	KG 10/16/1979 B,003:3
Challenge upheld to utility's films	KG 10/10/1979 B,011:5
New personnel director for Consumers here	* KG 10/09/1979 C,006:1
Microscopic cracks found in Palisades pipes	KG 10/06/1979 B,017:4

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Nuclear wastes finally buried	KG 10/04/1979 A,003:3
Executive changes made	* KG 10/04/1979 D,006:3
PSC order slashes gas rate	KG 10/03/1979 B,014:5
Utility energy firm under fire	KG 09/28/1979 A,009:3
Consumers Power rate slash urged	KG 09/26/1979 B,016:4
Gas plant shutdown savings cited	KG 09/22/1979 A,004:3
Using more electricity? Ask why	* KG 09/16/1979 E,001:1
Judge blocks gas rate hike	KG 09/07/1979 B,005:1
Costly gas plant to be mothballed	KG 09/06/1979 B,003:5
Final OK given gas pipeline	KG 08/29/1979 C,007:4
PSC ruling awaited on pipeline route	KG 08/28/1979 A,019:3
Dredging, barge slip installation planned	KG 08/26/1979 B,022:1
Consumers adjustment clause revised	KG 08/22/1979 B,003:3
Consumers' Big Rock plant is target of N-power foe	KG 08/16/1979 B,003:4
Delays in licensing costly, says Selby	KG 08/16/1979 B,003:5
DNR may buy land on rivers	KG 08/02/1979 C,010:1
Utilities must reveal documents	KG 08/01/1979 D,012:5
Consumers drops plans for tax appeal	KG 07/31/1979 C,020:5
Second Consumers Power refund ordered by PSC	KG 07/20/1979 A,009:1
Palisades waste sent to lab for analysis	KG 07/19/1979 D,014:5
Consumers to pay huge gas refund	KG 07/18/1979 A,001:1
James G. Lewis named Palisades general manager	* KG 07/14/1979 A,003:3
✗ Inspection set for Palisades wastes	KG 07/13/1979 B,006:1
✗ Consumers may face fines for leakage	KG 07/10/1979 E,004:1
Utility reviews reports on leak of reactor wastes	KG 07/09/1979 A,003:1
Nevada miffed at leakage	KG 07/07/1979 A,001:1
Nevada is blaming Consumers for leak	KG 07/06/1979 A,002:5
✗ Leak found in truck hauling wastes from plant	KG 07/04/1979 B,001:1
✗ Consumers says waste leak cause unknown	KG 07/04/1979 B,002:2
Consumers asks to expand storage of nuclear waste	KG 07/03/1979 A,009:4
Consumers Power Gas rate hike OK'd	KG 06/28/1979 B,010:1
Consumers faces probe of Midland plant permit	KG 06/28/1979 B,011:1
Consumers Power gas rate hike request before PSC	KG 06/27/1979 B,009:4
No radioactivity found in Palisades resin waste	KG 06/22/1979 B,005:2
Consumers Power safety costs asked	KG 06/20/1979 D,001:1
Radioactive material leaks from Palisades	KG 06/12/1979 E,003:3
Citizens Lobby claims 'coverup' by Consumers	KG 06/06/1979 B,004:1
'Equal payments' rise	KG 06/03/1979 D,016:1
Consumers, Edison may escape fines for pollution	KG 05/24/1979 A,008:3
Palisades back on line, Big Rock, Cook 1, 2 down	KG 05/22/1979 B,003:1
Palisades plant back in business	KG 05/21/1979 A,003:3
Group urges closing of Palisades plant	KG 05/18/1979 B,007:5
Nuclear protestor faces trial	KG 05/18/1979 B,013:1
Nuclear disaster training upgraded	KG 05/17/1979 B,003:1
✗ Palisades changes argued	KG 05/10/1979 A,001:2
Big Rock leak repair studied	KG 05/09/1979 B,014:1
Citizen groups lose PSC bid in Consumers rate hike	KG 05/08/1979 B,015:1
Big Rock Generator faces long shutdown	KG 05/05/1979 A,002:4
Consumers wants Palisades' costs passed on	KG 05/03/1979 A,003:1
Palisades installing earthquake guards	KG 05/03/1979 B,003:1
Palisades plant down for two weeks	KG 05/02/1979 B,006:1
Problem in restarting plant in South Haven	KG 05/01/1979 A,003:3
Palisades needs OK to shut down generators	KG 05/01/1979 A,004:1
Palisades back on line	KG 04/27/1979 B,008:3
Palisades plant closed	KG 04/26/1979 B,010:1
Consumers Power bills lower than average	KG 04/25/1979 A,008:5
Palisades plant has a problem	KG 04/25/1979 D,011:3
State asks delay on rate request by Consumers	KG 04/24/1979 A,012:1
State redrafting nuclear report rules after leak	KG 04/24/1979 A,012:1
Nuclear plant to be shut down for indefinite time	KG 04/23/1979 A,008:4
Big Rock reactor in cold shutdown	KG 04/22/1979 A,001:5
Consumers offers assurance	KG 04/21/1979 A,004:4
Company taking 'prudent steps'	KG 04/20/1979 A,003:1
Consumers Power Co.'s income up 37 percent	KG 04/20/1979 B,006:1
Midland nuclear plant target of Saturday protest	KG 04/19/1979 A,001:2
Utility accused of rushing 4 rate hike requests	KG 04/19/1979 A,010:1
Consumers Power asks Charlevoix enlarged storage	KG 04/17/1979 A,005:2
Nuclear power 'death specters' arraigned	KG 04/17/1979 C,007:1
Arraignment of protesters scheduled	KG 04/16/1979 B,024:3
Aymond details power future	* KG 04/13/1979 A,001:1
Electricity rate hike fight OK'd	KG 04/10/1979 C,020:4

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Palisades disaster?
Utility officials in state term leaks possible
Morrow plant will stop 2 generators
Once-popular recreation site
Age catching up with power plant
Record amount of gas used
Power plant sites located
X Consumers details planning
Electric rate hike sought
Cost of electricity goes up 'significantly' here
Consumers Power faces suit for dumping coal
Higher utility rates approved
Consumers Power won't start new nuclear plant
Environmentalists cool to Palisades plan
Awesome power plant won't be No. 1 very long
Palisades plant closed by seal leak
Palisades plant back in operation
Leak to keep Palisades power plant shut down
Senior citizens go for electricity discount
Kelley fights Consumers rate hike
Palisades shut down; seals blamed
Five violations cited at Palisades
Nuclear core may never need replacing
Consumers bills are going up
Consumers works on electricity plan
State sues Consumers on rate hike
Palisades plant generates a 1st
He updates the nuclear message
Rates to be tied to U.S. price index
PSC grants Consumers rate boost
Masked intruder darkens city
Consumers given gas rate hike
Finding of violations unlikely at Palisades
20 anti-nuclear protesters march at Midland
N.R.C. to check Palisades
PSC orders gas rebates by Consumers
Rate hike upheld
Consumers gets OK on electric hike
Powerful big plant
X Consumers vows to stop radiation mishaps
PSC hunts way to halt overcharges
New plant to increase power rates
'Ripple' could be wave of the future
Palisades nuclear plant operation
Consumers seeks okay for refund
Palisades nears restart
New chief elected
Utility to sell land holdings along rivers
Kelley moves to block gas rate increase
Court clears way for Midland plant
Attorney general sues to block increase
Way clear for early startup at Palisades
Overcharges may total \$30 million
Consumers, cities study plant sharing
Nuclear refueling shortcut sought
Asks another gas rate hike
Restarting Palisades could ease coal demand
Blackouts? At least a month away
Ohio, Indiana decline offer of Michigan Power
Consumers Power rate hike okayed
Small dip in utility's coal piles
Power costing more
Gains made with power cuts
Consumers given OK to continue on Midland plant
Palisades nuclear plant no help during strike
Electric power cuts planned in area
Kelley asks new rebate by Consumers
Palisades ordered to tighten security
Radiation fear ends in demotion
Some utility payments won't show on new bills
Clean air rules may cost utility customers

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KG 03/04/1979 A,001:3
* KG 03/04/1979 E,001:1
* KG 03/04/1979 E,001:4
KG 02/16/1979 B,010:2
* KG 02/04/1979 C,022:1
KG 02/01/1979 A,001:4
KG 01/29/1979 A,001:3
KG 01/26/1979 A,014:1
KG 12/22/1978 B,012:5
KG 11/30/1978 A,010:1
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KG 09/13/1978 D,005:1
KG 09/06/1978 D,001:6
KG 09/03/1978 D,019:1
KG 08/31/1978 A,005:1
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KG 08/22/1978 C,008:1
KG 08/21/1978 B,010:1
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KG 08/14/1978 C,006:1
KG 08/10/1978 D,006:1
* KG 08/08/1978 D,001:1
KG 08/02/1978 C,011:1
KG 08/01/1978 A,008:1
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KG 07/11/1978 B,004:3
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KG 05/27/1978 A,026:4
KG 05/23/1978 A,001:5
* KG 05/17/1978 E,001:1
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KG 05/02/1978 B,003:1
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KG 04/12/1978 B,004:5
KG 04/11/1978 B,003:3
KG 04/04/1978 C,010:1
KG 04/04/1978 C,018:4
KG 03/22/1978 A,001:4
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Consumers Power lists 1977 earnings	KG 02/03/1978 B,018:4
Error pares natural gas rate increase	KG 02/01/1978 B,011:4
Palisades security reviewed	KG 01/31/1978 A,013:1
Consumers may act on coal needs	KG 01/31/1978 B,011:1
Consumers Power to list land leasees	KG 01/30/1978 A,004:3
Palisades pauses for refreshment	* KG 01/29/1978 A,014:1
Oil import fee protested	KG 01/25/1978 C,012:1
Utilities say hikes too small	KG 01/24/1978 A,009:4
PSC OKs phone, gas hikes	KG 01/23/1978 A,001:2
Power plant to cost \$1 billion	KG 01/19/1978 E,001:1
Refunds to be delayed	KG 01/18/1978 D,007:1
5% electricity drop	KG 01/11/1978 E,005:4
Replies to pollution accusation	KG 01/11/1978 E,005:6
2 state utilities rated high among polluters	KG 01/09/1978 B,008:1
Palisades plant refueling planned	KG 01/07/1978 A,024:4
Ruling says Consumers Power must cease monopoly	KG 01/04/1978 B,006:1
Consumers Power must sell share of plant	KG 01/03/1978 A,008:1
Consumers' customers get break	KG 12/29/1977 B,007:1
Palisades settlement halts lawsuit	KG 12/10/1977 A,001:5
Utility loses appeal of Ottawa tax level	KG 12/07/1977 A,003:5
Consumers wins rate case	KG 12/06/1977 A,001:2
Review set on Midland nuclear plant	KG 12/06/1977 D,001:6
1 injured in planned blackout	KG 12/02/1977 A,001:2
Consumers Power hits PSC impasse	KG 12/02/1977 A,008:5
Production resumes at power plant	KG 11/29/1977 A,003:2
Palisades power fails	KG 11/26/1977 A,003:4
Consumers locals OK new pact	KG 09/30/1977 C,010:1
Bills go up \$1.33	KG 09/27/1977 D,004:3
Consumers Power given go-ahead on Midland plant	KG 09/24/1977 A,008:3
Consumers to open more gas pipes	KG 09/07/1977 A,003:5
Utility workers and power firm settle	KG 09/02/1977 B,009:1
Consumers, utility worker talks continue	KG 09/01/1977 A,003:5
Power firms to borrow idea from cavemen	KG 08/30/1977 D,001:4
More nuclear rods to be stored at Palisades	KG 08/23/1977 B,004:5
Action allows mobile homes at power plant site	KG 08/17/1977 D,016:4
Change in habits could trim bills	KG 08/16/1977 A,005:1
Consumers Power denies allegations by columnist	KG 08/12/1977 C,007:1
Consumers to clean up water	KG 08/05/1977 A,007:1
Consumers eyes gas conservation	KG 07/28/1977 D,005:1
Power lost during rain in Cadillac	KG 07/19/1977 B,009:3
4,730 acres for sale by utility	KG 07/17/1977 B,023:1
But not here they hope	KG 07/15/1977 A,001:1
Pipeline testing is a big job	KG 07/15/1977 A,003:5
Spent fuel rods piling up	* KG 07/03/1977 A,010:1
City, power co. on EPA's action list	KG 07/02/1977 A,003:2
Claims record profits are inadequate	KG 06/26/1977 F,001:1
Nuclear millstone?	* KG 06/26/1977 F,001:1
Consumers electric bills to go down	KG 06/22/1977 B,010:3
Consumers told to make refund	KG 06/06/1977 A,003:5
\$14 million settlement in Palisades suit	KG 05/21/1977 A,001:1
Consumers receives settlement	KG 05/20/1977 D,014:6
Accused of giving incorrect data about project	KG 05/11/1977 E,007:1
Consumers profits show 41% increase	KG 04/29/1977 D,003:4
'No' city tells Kelley	KG 04/19/1977 B,012:1
Record earnings for Consumers Power Co.	KG 04/15/1977 A,003:2
Stock dividend increased	KG 04/14/1977 D,004:2
Consumers earnings hit high	KG 04/13/1977 A,003:4
City officials hear Consumers story	KG 04/12/1977 B,003:1
Palisades operating extension requested	KG 04/09/1977 A,007:1
Kelley asks dismissal of rate bid	KG 04/07/1977 D,004:4
Changing electrical use goal of project	KG 04/06/1977 A,003:1
Kelley seeks help to fight utility	KG 04/05/1977 A,004:3
Law crucial to nuclear power	KG 04/02/1977 A,003:1
Consumers awaits okay on nuclear rod storage	KG 03/24/1977 D,001:1
Discharge into lake sought	* KG 03/23/1977 A,003:1
Consumers Power rebate urged	KG 03/23/1977 A,012:1
Consumers gas users to pay more	KG 03/23/1977 B,009:2
Question mark in energy crisis	* KG 03/06/1977 F,001:1
Consumers asks halt on Midland hearings	KG 03/05/1977 A,013:1
Customers will pay for security	KG 02/25/1977 B,007:3
Marysville plant called foresight	* KG 02/25/1977 B,008:3

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Court will review nuclear waste issue
Consumers seeks continued saving efforts
Dow casts doubts about nuclear plant
Spent fuel limited at Palisades
Consumers requests increase
Comstock faces tax appeal battle alone
Gas customers asked to lower thermostats
Consumers' theme: poor public utility
Consumers in another rate bid
Your gripe squad is waiting
Consumers fills customer-service post
Consumer seeks fees from meter tamperers
Comstock preparing for utility-tax fight
Help with tax lawsuit eyed by Comstock
All things must pass (smokestack)
Midland reactor capped
Rates up slightly
Palisades power plant may close for 1981-82
Dow claims threat by Consumers
Short shutdown for Palisades repairs
Letters: Involvement in Oregon
Gas bills up
Smokestack's last puff
More nuclear power for Consumers
Standing tall, but ready to fall
Money back
Consumers mails overcharge checks
Consumers refund checks to be mailed
Consumers says suspension costly at Midland
Consumers Power to refund \$35 million
PSC orders lower bills
NRC backs safety of nuclear plants
Nuclear plant at Palisades shut
Hardy Dam tax ruling appealed
Consumers plans higher gas prices
Consumers announces bond issue
Tax tribunal in unfamiliar water
Rate hike approved
State tax tribunal asserts new power
Utilities fight Wolpe bill
Nuclear plant accident kills second man
Sensitive dummy soaks up rays
Gas blamed in nuclear plant death
Consumers, city clash over rates
City to get rate proposal
Notice of rate increase hearing
Consumers Power electric charges down
Power struggle
Consumers Power to seek appeal
Power shortage affects 6,000
Exhibit here deals with energy
Midland plant work resumes
City continues rate boost fight
Consumers Power hikes natural gas rate bid
First nuclear plant back in operation
Customers have powerless feeling
To the electric customers of Consumers Power Co.
Utility refund checks coming
They'd rather pay than switch
Work halted again
Consumer, Edison adjustments OK'd
Consumers to continue work on new plant
Consumers asks addition to gas rate hike
Federal judge orders review of nuclear project
Plant surveillance stepped up
Storm closes Palisades plant
Electric rate hike OK'd
Nuclear plant declared safe
Michigan's utility rates right in the middle
Palisades shut down for check
Power rate 'pancaking' is rejected

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KG 02/22/1977 A,008:2
KG 02/03/1977 A,010:1
KG 02/03/1977 A,010:3
KG 02/01/1977 B,012:3
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* KG 01/28/1977 A,007:1
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* KG 12/29/1976 B,003:1
* KG 12/21/1976 C,001:1
KG 12/21/1976 C,004:4
KG 12/10/1976 D,001:4
KG 12/04/1976 A,022:4
KG 12/02/1976 A,003:1
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KG 11/19/1976 C,007:3
* KG 11/15/1976 A,001:1
KG 11/12/1976 A,009:3
* KG 11/10/1976 A,001:1
KG 11/09/1976 A,001:2
KG 11/01/1976 D,005:1
KG 10/30/1976 A,006:4
KG 10/29/1976 D,001:4
KG 10/27/1976 C,001:1
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KG 10/22/1976 A,013:5
KG 10/21/1976 D,001:3
KG 10/19/1976 D,005:3
KG 10/08/1976 A,001:4
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KG 10/03/1976 A,007:1
KG 09/30/1976 D,006:5
KG 09/30/1976 D,007:1
KG 09/24/1976 D,001:1
KG 09/21/1976 D,005:2
* KG 09/20/1976 A,010:1
KG 09/18/1976 A,004:3
KG 09/08/1976 A,010:5
KG 09/07/1976 A,003:1
KG 09/01/1976 A,004:3
KG 08/31/1976 A,001:1
* KG 08/29/1976 A,007:1
KG 08/26/1976 C,005:6
KG 08/18/1976 A,003:1
* KG 08/12/1976 A,003:2
KG 08/12/1976 E,003:1
KG 08/10/1976 A,007:1
KG 07/31/1976 A,009:1
KG 07/31/1976 A,011:1
KG 07/30/1976 A,001:4
KG 07/30/1976 B,002:1
KG 07/29/1976 C,009:1
KG 07/29/1976 C,009:3
* KG 07/28/1976 D,001:1
KG 07/27/1976 B,010:5
KG 07/24/1976 A,002:3
KG 07/23/1976 B,002:4
KG 07/23/1976 B,002:4
KG 07/21/1976 D,001:1
KG 07/21/1976 D,004:3
KG 07/20/1976 A,001:4
KG 07/17/1976 A,011:4
KG 07/06/1976 D,003:1
KG 07/04/1976 A,003:4
KG 06/29/1976 A,003:6

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PSC orders cutback in July electric rate	KG 06/28/1976 A,001:3
Court rules against electric rate boost	KG 06/24/1976 A,003:5
Notice of hearing	KG 06/23/1976 A,013:4
Consumers' electric demand up	KG 06/20/1976 B,018:3
Palisades radiation survey set	KG 06/07/1976 A,017:4
Consumers seeking hike in gas rate	KG 05/28/1976 D,004:3
Public notice: rate increase hearings	KG 05/27/1976 A,007:5
Consumers aides named	KG 05/23/1976 F,004:3
'Miss Dig' wins award	KG 05/20/1976 B,013:5
'Black Journey' display in Portage	KG 05/19/1976 C,007:2
Consumers alters management	* KG 05/18/1976 B,009:4
Consumers Power files rate suit	KG 05/13/1976 A,009:1
Palisades plant running again	KG 05/12/1976 B,014:1
Consumers Power picks Macintosh	* KG 05/07/1976 A,004:6
Consumers Power hike nation's second highest	KG 05/04/1976 B,001:5
U-M environmentalist charges deception	KG 05/03/1976 A,007:5
Consumers Power revenue, income for year increase	KG 04/29/1976 D,004:2
Palisades out for two more weeks	KG 04/27/1976 A,013:4
Palisades start-up scheduled this week	KG 04/26/1976 B,008:3
College denies pressure from Consumers Power Co.	KG 04/22/1976 C,012:5
Palisades plant ready to start operating again	KG 04/16/1976 A,003:1
Consumers to ask new rate hike	KG 04/14/1976 B,004:5
PSC criticized for cutting Palisades output	KG 04/13/1976 D,001:1
Consumers gets partial rate boost	KG 04/12/1976 A,001:5
Consumers' rate decision Monday	KG 04/11/1976 A,001:4
Consumers Power denied new hearing	KG 04/03/1976 A,015:4
Court won't hear appeal on refunds	KG 04/02/1976 D,001:3
Consumers ordered to pay refund	KG 03/22/1976 A,001:5
Palisades power plant due for April restart	* KG 03/19/1976 A,003:3
Report of radiation-linked injury denied	KG 03/17/1976 D,001:1
Utility's head decries radiation danger claim	KG 03/16/1976 A,017:1
Four refuse Palisades work	KG 03/15/1976 A,001:1
Look who's on solar-energy bandwagon	KG 03/14/1976 F,001:3
Consumers and Edison to refund \$3.3 million	KG 03/13/1976 A,002:5
Powerless list whittled	KG 03/12/1976 A,003:2
PSC action draws blast	KG 03/09/1976 A,001:5
Consumers rate boost is rejected	KG 03/08/1976 A,001:5
Proposed law may hit gas supplies	KG 03/04/1976 A,008:1
Consumers rate hike gets support	KG 03/02/1976 A,001:4
Consumers Power chief attacks critics	KG 02/27/1976 B,008:3
Earnings up	KG 02/27/1976 B,008:6
Kelley will press fuel refund hikesuit	KG 02/24/1976 A,001:5
PSC hit for permitting Consumers rate practice	KG 02/21/1976 B,004:5
Impact of Canadian oil rationing play eyed	KG 02/12/1976 C,008:4
Bell, Consumers rate hikes denied	KG 02/09/1976 A,001:4
Snow means gastimates by utility	KG 02/05/1976 A,003:1
Consumers Power tax hearing set	KG 01/27/1976 D,001:1
Consumers Power denies overbilling	KG 01/15/1976 A,008:5
Kelley to seek rebates	KG 01/15/1976 A,008:5
Marysville decision near	KG 01/13/1976 B,003:4
Vandals are blamed for power failure in area	KG 01/12/1976 A,001:1
Canada's oil cutback to affect Consumers	KG 01/08/1976 A,010:4
Hearing on metering and reselling of service	KG 01/07/1976 A,002:1
Consumers' expansion plans told	KG 12/24/1975 A,003:6
\$22 million water softener for Palisades	KG 12/03/1975 A,001:4
Consumers to clean power plant smoke	KG 11/21/1975 B,009:1
Consumers plant back in service	KG 11/18/1975 A,009:6
Probe planned of rate of return	KG 11/18/1975 D,004:1
Gas bills going up	KG 11/13/1975 B,001:1
Judge recommends gas customers pay	KG 11/13/1975 C,003:3
Consumers Power cuts back on latest request	KG 11/11/1975 C,008:1
Consumers appeals rate refund order	KG 11/05/1975 A,001:1
Palisades plant reopens after maintenance work	KG 11/04/1975 A,003:5
Consumers Power defends fuel adjustment clause	KG 11/01/1975 B,006:1
Court backs dismissal of nuclear plant suit	KG 10/28/1975 D,001:1
Consumers Power's earnings increase	KG 10/22/1975 D,012:2
Palisades plant faces another 3-month shutdown	KG 10/19/1975 A,012:1
Black history exhibit to open	KG 10/19/1975 A,018:3
Consumers told to refund part of boost	KG 10/15/1975 A,003:5
Gun pointed at Michigan's head	KG 10/15/1975 C,007:4
Lesser rate hike set for Consumers	KG 10/11/1975 A,001:4

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Prosecutor continues battle against ex-head of PSC
Palisades' discharge exceeded limits twice
Consumers denies Rosenberg influence
Pressure denied on power rate
Palisades plant back in operation
Kelley says Consumers overbilled its customers
Palisades plant again shut down
Statewide 'dig' program launched
May need outside power
Power out 40 minutes
Homestead restoration runs into problems
Wave buffer proposed at Palisades
Palisades plant back in service
Consumers Power says profits rise sharply
Radioactive discharge reported
Consumers Power wins Midland plant ruling
PSC chief's role in gas rate proceedings question
Marysville plant construction costs were disputed
Palisades plant back in service
Palisades back in service
Big Rock plant restarted
Racoon again cuts power at Consumers
Electricity boost
Palisades shut down
Consultant denies pressure on report
To recommend customers pay gas plant costs
Fuel shortage contingency plan OK'd
Adequate electric power supplies seen
Consumers Power adjusts earnings
PSC okays rate boost
Legislation needed?
Loan lesson to cost public
\$118 million rate hike sought
Will seek \$100 million rate hike
Power plant work slowed at Midland
Upjohn and Brown face gas cutback
\$5 million a month saved by Palisades
Livonia suing Consumers
Consumers Power expected to make rate request
City facilities on gas waiting list
Cost probe upholds Consumers
Jobs linked to power growth
Palisades verbally blasted
Midland plant cost zooms to \$1.4 billion
Covert continuing Palisades tax suit
Utilities planning to seek new rate hikes
Consumers Power backs gas charge proposal
Palisades plant to reopen
Palisades' safeguards unlike TVA's N-plant
Another plant back in service
Consumers hearing rescheduled
City officials told about cost of utility rate
Consumers' letter campaign questioned
The race for utility rate hikes
Consumers Power to seek new rate boost
Editorial: Building trust and power plants
Consumers, Covert agree to continue tax suit
Viewpoint: Consumers Power defended
Problems at Palisades facing president of CPC
Name new president of Consumers Power
Mc Divitt quitting Consumers Power
Midland plant will cost \$1.1 billion
Consumers Power Co. has \$1 billion year
Customers to pay half of \$13.7 million loss
Consumers to charge plans' cost
Consumers Power Co. tells financial bind
Rates based on cost would mean healthy utility
Municipal pump rate hike still target
Extend Palisades plant shutdown
Consumers Power electrical rate increase OK'd
Cities protest Consumers request

* KG 09/24/1975 B,004:4
KG 09/17/1975 C,001:5
KG 09/09/1975 D,001:1
KG 09/05/1975 A,009:1
KG 08/26/1975 A,016:6
KG 08/21/1975 D,004:2
KG 08/19/1975 D,001:4
* KG 08/13/1975 C,006:3
KG 08/07/1975 B,013:1
KG 08/05/1975 D,005:1
KG 08/04/1975 B,001:1
KG 07/31/1975 D,001:6
KG 07/29/1975 D,001:4
KG 07/24/1975 B,002:3
KG 07/23/1975 D,001:6
KG 07/19/1975 B,005:1
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KG 06/30/1975 A,014:3
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KG 06/11/1975 D,008:1
KG 06/04/1975 D,004:4
KG 06/02/1975 A,001:3
KG 05/30/1975 A,003:3
KG 05/29/1975 A,006:3
KG 05/27/1975 A,001:4
KG 05/21/1975 E,004:4
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KG 05/15/1975 D,017:1
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KG 04/23/1975 A,015:2
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KG 04/02/1975 C,008:5
KG 04/01/1975 C,001:3
KG 04/01/1975 C,001:4
KG 04/01/1975 C,001:6
KG 03/18/1975 B,001:6
KG 03/04/1975 B,006:5
KG 03/03/1975 B,020:4
KG 03/02/1975 D,008:1
KG 03/01/1975 A,001:2
* KG 02/27/1975 A,004:1
KG 02/26/1975 D,001:4
* KG 02/24/1975 A,007:3
KG 02/22/1975 B,006:1
* KG 02/21/1975 A,003:3
* KG 02/20/1975 A,003:1
KG 02/15/1975 A,010:1
KG 02/12/1975 D,005:5
KG 02/11/1975 B,014:5
KG 02/10/1975 A,013:1
KG 02/04/1975 A,001:4
KG 02/04/1975 B,001:1
KG 01/31/1975 B,007:1
KG 01/31/1975 D,001:7
KG 01/24/1975 A,001:1
KG 01/23/1975 A,004:4

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Michigan heat bills to zoom?	* KG 01/22/1975 A,003:4
Power rate hike ruling awaited	KG 01/21/1975 D,001:1
PSC sets hearings on rate hikes	KG 01/17/1975 A,010:6
Power company might recover \$13.7 million	KG 01/16/1975 C,002:7
Consumers rates protested	KG 01/11/1975 A,008:6
Consumers to refund \$941,000	KG 01/07/1975 A,008:1
Otsego joins power rate hike fight	KG 01/07/1975 C,001:6
Consumers rate bid gets boost	KG 12/24/1974 A,008:3
Consumers cites loss on abandoned project	KG 12/20/1974 E,004:1
Consumers Power splits gas operation	KG 12/18/1974 A,014:7
Consumers makes management shifts	KG 12/10/1974 C,008:4
Major overhaul at Palisades	KG 12/05/1974 A,011:1
Gas discharge reported	KG 12/04/1974 C,010:1
Consumers asks gas rate hike	KG 11/28/1974 A,001:1
Power firms lose bid	KG 11/21/1974 C,007:4
Residential gas users get break	KG 11/20/1974 A,003:1
Residential gas users due cut?	KG 11/19/1974 A,003:1
New hearings asked on Consumers plant	KG 11/19/1974 C,001:5
Consumers seeking another rate boost	KG 11/15/1974 A,001:5
PSC questions nuclear construction quality	KG 11/12/1974 D,001:1
Palisades shutdown: down the (7,000) tubes	KG 11/12/1974 D,003:4
Palisades plant shut down again	KG 11/09/1974 A,005:6
Report backs Consumers' decision on gas plant	KG 10/17/1974 C,001:1
Consumers Power asked about insulation ads	KG 10/15/1974 E,004:1
PSC to intervene in lawsuit	KG 10/15/1974 E,004:4
Nuclear plant has go-ahead	KG 10/12/1974 B,004:5
Consumers denies monopoly charges	KG 10/11/1974 B,005:5
Consumers Power monopoly attacked	KG 10/10/1974 B,002:5
Utility refunds to customers urged	KG 10/08/1974 B,006:2
Testing resumed at Palisades plant	KG 10/03/1974 C,001:5
Consumers hits Kelley	KG 09/28/1974 A,005:1
A.E.C. OK's Midland A-plant	KG 09/28/1974 B,004:1
Consumers rebates \$1.3 million	KG 09/25/1974 B,001:3
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Electric rate increase OK'd	KG 09/17/1974 A,001:5
Consumers may get electric rate boost	KG 09/16/1974 A,001:4
Kelley hits billing plan	KG 09/12/1974 C,004:2
Consumers pays fine, but defends Palisades	KG 09/11/1974 D,001:1
Turbine trouble halts Palisades start-up	KG 09/07/1974 A,001:2
Consumers Power Co. fires up Palisades plant	KG 09/05/1974 B,001:2
UAW raps utility 'scare' campaign	KG 09/05/1974 D,003:1
Palisades plant gets 90-day 'OK'	KG 09/04/1974 A,003:2
8 operations listed as affecting river quality	* KG 09/02/1974 C,001:1
Funds in state treasury help utilities sell bonds	KG 09/02/1974 C,001:1
Consumers dissolves program	KG 09/01/1974 B,013:3
Palisades plant suppliers sued for \$300 million	KG 08/29/1974 A,003:5
Natural gas sale OK; 'windfall' is charged	KG 08/27/1974 D,003:5
Consumers makes plea for electric rate hike	KG 08/26/1974 A,013:3
Report disappoints consumers	KG 08/21/1974 A,004:6
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Interim utility hikes seen by November	KG 08/03/1974 A,001:1
Consumers drops plan for plant	KG 08/03/1974 B,003:3
Cities expect to try again for rate hike	KG 07/28/1974 F,004:1
Contribution plan shelved	KG 07/23/1974 C,008:4
AEC dismisses Palisades charges	KG 07/22/1974 A,010:1
Earnings in plunge	KG 07/19/1974 D,004:1
AEC reports Consumers complying	KG 07/17/1974 A,015:3
National credit rating drops	KG 07/12/1974 D,004:1
Consumers pursues AEC okay	KG 07/12/1974 D,004:2
Consumers asks new rate hike	KG 07/10/1974 A,003:6
Utility eyes gas supply boost	KG 07/04/1974 B,001:5
Nuclear plant plans canceled by Consumers	KG 06/29/1974 B,003:6
Austerity plan announced by Consumers Power Co.	KG 06/27/1974 D,001:1
No summer brownouts seen	KG 06/16/1974 B,001:3
Palisades center to close	* KG 06/14/1974 B,003:6
Palisades shutdown could cause shortage here	KG 06/06/1974 B,001:5
Utility planning layoffs	KG 06/04/1974 D,001:1
Palisades plant remains closed	KG 05/29/1974 B,001:1
Consumers gets okay to accept customers	KG 05/24/1974 C,010:6

CONSUMERS POWER COMPANY

Mc Divitt blasts rate hike critics
Citics fight request to boost electrical rates
AEC asks procedural changes for Palisades
Palisades investigated by justice department
Palisades plant still closed
Palisades tax suit returned
Delay start of A-plants
Power plant opposed
Consumers management practices hit
Palisades prepares for tests
Rate hike battle set in Lansing
2 utilities ask new rate hikes
Consumers gas boost approved
Mc Divitt viewed as future Consumers president
Consumers Power set to ask boosts for utilities
Palisades plant reopening near
Consumers rapped for power plant infractions
Utility rebate ordered
PSC okays Consumers \$77 million rate hike
Consumers Power ruling attacked by Rep. Wolpe
Rate case ruling due Wednesday
Nuclear plants out of service
Gas, electricity rates attacked
Wolpe praise
Union vote March 19 at Consumers
Hearing on higher rates set
City to fight proposed power rate hike
TV commercial is honored
Electricity, gas rates are topics
Kelley fighting rate increases
Big profit seen from gas sale
A.E.C. probing Palisades charges
State, U.S. agencies rap Consumers Power Co.
More bad news for utility customers
Resolution filed on rate hike
Consumers plant costs scrutinized
Curtailed new gas sales: PSC
Palisades license asked
Report on coal heat clarified
Wolpe calls rate hikes 'exorbitant'
Consumers gets rate increase
Consumers' plan OK'd
Union fights job cuts by Consumers
Big Rock plant still shut down
New head named at Palisades
Nuclear power is waiting in wings
Utility facing fight
Consumers film tells of energy challenge
Agency rules CPC can look for gas legally
CPC official gives opinion on reasons for crises
Natural gas source sought
Consumers advertising is called misleading
Big Rock repairs scheduled
Should utility have power to share?
2nd nuclear plant closed by leak
Consumers lax, DNR charges
Consumers Power asked plant data
Consumers Power denies it has monopoly power
Home installation plan approved
Gas, power hikes OK'd
Radioactive material escaped
Consumers asks priorities
Palisades: a \$3 million a month millstone?
Ruling against Consumers Power
Woes at Palisades nuclear plant mount
Palisades tax break protested
Consumers to reduce pollution
Consumers seeks to pay more for gas
Consumers aiming at improving insulation
Consumers is criticized
Palisades shutdown reported costly

KG 05/15/1974 B,004:6
KG 05/14/1974 D,003:3
* KG 05/10/1974 D,004:1
KG 05/09/1974 C,001:1
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KG 04/27/1974 A,005:2
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KG 04/19/1974 A,003:6
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KG 04/10/1974 A,003:5
KG 04/08/1974 A,001:4
KG 04/03/1974 E,001:1
KG 03/30/1974 A,013:4
KG 03/28/1974 A,001:2
KG 03/28/1974 D,006:1
KG 03/26/1974 A,004:1
KG 03/23/1974 A,007:7
KG 03/16/1974 A,001:4
KG 03/12/1974 A,012:7
KG 03/10/1974 D,007:1
KG 03/05/1974 E,005:3
KG 02/26/1974 A,010:2
* KG 02/24/1974 A,018:3
KG 02/24/1974 B,014:6
KG 02/21/1974 D,005:3
KG 02/10/1974 B,019:3
KG 02/09/1974 A,001:2
KG 02/05/1974 B,001:1
KG 02/01/1974 A,003:1
KG 01/31/1974 B,016:4
KG 01/29/1974 A,004:7
KG 01/24/1974 A,012:4
KG 01/24/1974 D,001:4
KG 01/24/1974 D,005:4
KG 01/21/1974 B,018:6
KG 01/18/1974 A,001:1
KG 01/18/1974 A,019:1
KG 12/27/1973 A,010:4
KG 12/22/1973 A,011:5
KG 12/20/1973 C,001:5
* KG 12/16/1973 F,001:1
KG 12/15/1973 A,005:4
KG 12/13/1973 D,013:1
KG 12/12/1973 A,011:1
KG 12/12/1973 A,011:1
KG 12/12/1973 A,011:1
KG 12/11/1973 D,006:1
KG 12/10/1973 A,011:5
KG 12/09/1973 F,002:1
KG 12/08/1973 A,001:5
KG 12/08/1973 A,011:4
KG 12/04/1973 B,013:8
KG 11/28/1973 B,008:1
KG 11/15/1973 C,016:1
KG 11/10/1973 A,001:3
KG 11/09/1973 B,003:4
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KG 09/16/1973 A,009:1
KG 09/10/1973 B,008:4
KG 09/08/1973 A,011:2
KG 09/07/1973 A,001:1

CONSUMERS POWER COMPANY

'Waterwheel' power plant in operation
Rate hike asked for gas plant
Prompt rate hikes to residential users OK'd
Consumers gets okay to purchase gas
Intervention in rate hike bid is OK'd
Utility's ads protested
Palisades plant's license extended
Effects of Palisades plant shutdown told
Consumers denies Nader's charges
Midland plant given go ahead
Power rate prehearing scheduled
Rate pledged by Consumers
Palisades cooling towers
MPSC accepts Consumers rate applications
Natural gas sale approved
CPC tries again on rate hike
Gas priority issue heats up
Power rate bid lowered
Rejection of power rate hike applauded
Consumers rate hikes rejected
Consumers Power asks \$142 million rate hike
Midland atom plant safety hit
Palisades given full power okay
City to sell remaining ornamental street lights
WRC recommends tax exemption for towers
Plutonium okayed for Big Rock Power Plant
Delay in Midland atom plant claimed
→ Consumers Power tells of its financial needs
→ Court hearing on nuclear fuel set
→ Covert sells bonds to aid power plant
Palisades plant back in service
Palisades plant modifications nearly complete
✓ Plutonium to fuel Big Rock nuclear plant
Former steam plant sold
Power plant hearing set
Consumers bid on rate hike plan bogs down
✗ Waste system delay seen at Palisades plant
Another utility involved
Consumers Power defends service cutoff
Consumers plans to expand Holland area power plant
Book on Consumers Power
✗ Nuclear plant being repaired
Gas sales to new customers shut off
✓ Radiation release not an accident, Consumers says
✗ Palisades leaks don't mean future disaster
✗ Environmentalist raps Palisades plant 'leaks'
✗ 'No danger' in radioactive leak
No immediate threat facing power supplies
Bill policy defended by utility
Consumers cuts new customers
Sunday shutdown for Consumers facility here
Consumers wins power rate hike
Palisades key to air quality plans
Palisades tax break contested
Palisades gets full power okay
GOP hits Kelley's power rate deal
Agree on rate hike
That powerless feeling
The Palisades hearing
Consumers Power asks for home rate boost
Consumers Power buys Alpena tract
✗ Palisades plant hearings closed
Full-power okay not likely yet
✓ Fuel rod 'damage' report adds new threat
Consumers has decline in earnings
Power shortage priorities okayed
Palisades license hearing set in Kalamazoo
Way cleared for issuing full Palisades license
A.E.C. staff urges Palisades license for power
Utility explains expansion plans
Consumers gas rate hike OK'd

* KG 09/02/1973 A,007:1
KG 08/16/1973 C,011:6
KG 08/14/1973 A,008:2
KG 08/08/1973 D,009:1
KG 07/10/1973 B,010:4
KG 07/04/1973 A,013:1
KG 07/03/1973 A,010:3
KG 06/06/1973 F,001:1
KG 06/01/1973 B,012:1
KG 05/19/1973 A,009:1
KG 05/19/1973 A,009:2
KG 05/08/1973 C,006:1
* KG 05/02/1973 A,004:1
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* KG 12/29/1972 B,001:4
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KG 07/01/1972 B,003:4
KG 06/30/1972 C,007:3
KG 06/01/1972 B,011:3
KG 05/25/1972 C,004:1

CONSUMERS POWER COMPANY

Interest rate adjustment OK'd	KG 05/24/1972 C,006:3
Hearings on energy needs scheduled	KG 04/27/1972 C,008:3
Consumers views rates as too low	KG 04/12/1972 C,014:4
Full power urged for Palisades plant	KG 03/17/1972 B,004:4
Palisades plant gets 60% power okay	KG 03/11/1972 A,001:4
Rate hike denied	KG 03/11/1972 B,001:6
Ads stress electrical need	KG 02/25/1972 B,012:4
\$40 million for improved facilities in area	KG 02/08/1972 B,002:5
Aymond is president	KG 02/02/1972 C,007:1
Palisades 60% license hearing ends	KG 01/26/1972 B,001:1
Palisades wins initial approval	KG 01/25/1972 B,014:4
Consumers seeks rate hike	KG 01/25/1972 B,015:1
Plans \$383 million construction	KG 01/24/1972 B,009:1
Palisades hearing to begin Jan. 25	KG 01/16/1972 A,012:1
A.E.C. to resume hearing	KG 01/15/1972 A,005:1
Consumers asks rehearing	KG 01/12/1972 A,010:1
Electricity produced at Palisades	KG 01/03/1972 A,001:4
Licensing for Palisades still stalled	KG 01/02/1972 B,012:1

Say Yes to Michigan, Say No to the “Plutonium State Park”

Background on Big Rock Nuclear Power Plant

November 30, 2006

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Time Capsule

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[Note to readers: brackets denote reference documentation, as well as questions or comments upon Consumers Energy or government agency assertions discussed throughout this briefing paper. All references are available from the author or his sources, upon request. ***Also, any passages italicized and in bold represent the emphasis added by the author.***]

[The author wishes to acknowledge the following persons for their research contributions: Michael Keegan, Chair, Coalition for a Nuclear-Free Great Lakes; Kay Cumbow, Director, Citizens for Alternatives to Chemical Contamination; Kay Drey, NIRS Board Secretary; and Hugh McDiarmid Jr., Communications Director, Michigan Environmental Council. The author is responsible for any errors of omission or commission, however.]

The Big Rock Nuclear Plant on the shores of Lake Michigan near Charlevoix was permanently shut in 1997 after 35 years of atomic power production and radioactive waste generation. But the site continues to be haunted by high-level radioactive waste storage on-site, as well as soil, groundwater, shoreline, and very likely Lake Michigan sediment radiological contamination. The health risks of exposure and bio-accumulation of radioactive poisons in plants, animals, the food chain, and people should be of great concern. The hazards to human health, safety, and security will persist indefinitely.

Radioactive Waste: Terrorist Bull's Eye

“Electricity is but the fleeting byproduct from atomic reactors. The actual product is forever deadly radioactive waste.” ---Michael Keegan, Coalition for a Nuclear-Free Great Lakes

Despite the permanent shutdown of the Big Rock reactor nearly a decade ago, and its subsequent dismantlement and decommissioning, risks still abound at the site. This is emphasized by the presence of 441 bundles (nearly 64 tons) of highly radioactive nuclear fuel rods stored in 8 concrete and steel silos on a concrete pad surrounded by fencing, heavily armed security personnel, and guard dogs. [Description of site visit by Lana Pollack, President, MEC; radioactive waste inventory from U.S. Department of Energy, “Final Environmental Impact Statement for Yucca Mountain,” Feb. 14, 2002, Table A-7, “Proposed Action spent nuclear fuel inventory,” page A-15; U.S. Nuclear Regulatory Commission, “Cask Registration Data for General Licensees,” Nov. 11, 2006, emailed to author by NRC Spent Fuel Project Office on 11/27/06.]

The casks – BNFL FuelSolutions W150 casks, about 20 feet tall, 10 feet in diameter, sitting out in full view in the open air -- represent a radioactive bull's eye on the shore of Lake Michigan, the source of drinking water for millions.

Even the security measures in place at Big Rock, however, are of questionable efficacy against airborne, or remotely launched land-based and waterborne, attack scenarios. Remotely fired missiles, high explosives, and shaped charges could break open the containers and release

the radioactivity into the environment. In April, 2006 the investigative arm of the U.S. Congress, the Government Accountability Office, chastised the NRC for giving priority to the nuclear industry's bottom line over needed security upgrades at nuclear power plants.

[<http://www.nirs.org/reactorwatch/security/sec04042006gaorpt.pdf>]

A 1998 test at the U.S. Army's Aberdeen Proving Ground in Maryland showed that radioactive waste storage casks are vulnerable to anti-tanks missiles. The first missile obliterated the concrete shielding around the cask, and the second missile punched a hole through the cask wall to the inner waste chamber. Combined with incendiaries, the resulting fire could release catastrophic amounts of radioactivity into the environment. Each of the 8 casks at Big Rock contains about 240 times the long-lasting radioactivity released by the Hiroshima atomic bomb. Release of even a fraction of the contents of a single cask would be disastrous.

The 9/11 Commission report documented that Al Qaida had originally planned to hijack 10 jets on 9/11/2001. Two of the jets were going to be crashed into nuclear power plants. Al Qaida commanders, interviewed in Pakistan after the attacks, explained that the attack on nuclear facilities was called off for fear that the radiation release might "get out of hand," but that such attacks had not been ruled out in the future.

[<http://www.nirs.org/factsheets/nirsfctshdrycaskvulnerable.pdf> ; "240 times Hiroshima" calculation done by Dr. Marvin Resnikoff, Radioactive Waste Management Associates, New York City, a conservative figure, because it only accounts for the five radio-isotopes of cesium, but not the hundreds of other radioactive poisons in the waste; <http://www.9-11commission.gov/>; Giles Tremlett, The Guardian, "Al-Qaida leaders say nuclear power stations were original targets," Sept. 9, 2002; Curt Anderson, "Sept. 11 Commission: Al-Qaida Planned 10 Hijackings: White House, CIA and FBI headquarters, nuclear plants originally targeted," June 17, 2004, page 1.]

These wastes will remain stored on-site for at least a decade. The U.S. Department of Energy is now saying that 2017 is the earliest possible date that the proposed national dumpsite at Yucca Mountain, Nevada can be opened. However, this estimate assumes that no litigation will delay the schedule even longer, but the State of Nevada and environmental organizations – adamantly opposed to the proposed dump due to the site's geologic unsuitability – are likely to file further legal interventions.

[http://www.ocrwm.doe.gov/info_library/newsroom/documents/ym-schedule-2006.pdf]

If and when the dumpsite opens, however, it would still take many additional years to transport Big Rock's wastes there. [DOE Yucca FEIS] Michigan law forbids the transfer of Big Rock's wastes to another site ("Spent fuel rods shall not be transported from a nuclear power generating facility for storage at any other nuclear power generating facility."), such as to the Palisades nuclear plant in southwest Michigan. [RADIOACTIVE WASTE, Act 113 of 1978, Amended 1989, Section 325.491 Radioactive waste; depositing or storing in state prohibited; exceptions.] Thus, high-level radioactive waste will remain in storage at Big Rock for many years or even decades to come.

Consumers has even gotten permission from NRC to only inspect the casks once every two weeks. The casks do not have radiation or heat monitors directly installed upon them. Thus,

it would be possible for a radiation release or overheating incident to unfold for two weeks before being detected by the company.

A national coalition of environmental organizations, including groups in Michigan, has petitioned the U.S. Congress to fortify radioactive waste storage such as at Big Rock against terrorist attacks, as well as to safeguard it against accidents, as by requiring radiation and heat monitoring equipment on each cask. [See “Principles for Safeguarding Nuclear Waste at Reactors,” <http://www.citizen.org/documents/PrinciplesSafeguardingIrradiatedFuel.pdf>]

In the meantime, the radioactive rods at Big Rock raise obvious questions about public health, safety, and security risks, especially in regards to their susceptibility to terrorism or sabotage. The development of a state park is incongruous with a potentially catastrophic terrorist target. Inviting large numbers of families and children into close proximity to high-level radioactive waste for public recreation makes no sense.

The U.S. Environmental Protection Agency is due, by the end of the year, to publish its radiation release regulations for the proposed high-level radioactive waste dump at Yucca Mountain, Nevada. EPA has proposed, and will enact in its regulations, a one million year regulatory compliance period for high-level radioactive waste management at Yucca. This shows how long these wastes will remain hazardous to human health and the environment. [<http://www.epa.gov/radiation/yucca/index.html>]

Radioactive Contamination

Radiation Releases into the Environment

Ironically, despite its small size (it was a 75 megawatt-electric reactor, compared to a more typical 1,000 megawatt reactor), Big Rock released among the largest amounts of radioactivity of any single atomic reactor in the country. Many millions of curies of radioactivity were released into the air, soil, and groundwater, as well as into Lake Michigan’s waters and sediments, risking concentration in flora, fauna, and the food chain.

By way of comparison, a large university medical center, with as many as 1,000 labs in which radioactive materials are used for research, diagnosis, and treatment, may have a combined radiological inventory of only about two curies, which are not spewed into the environment as at Big Rock, but rather carefully handled and managed. [see <http://www.nirs.org/factsheets/greatlakespamp.pdf>]

To give a sense of the levels of radioactivity that Big Rock generated, the company hired to decommission the site reported: “BNG America removed and disposed the 280-ton reactor vessel at Big Rock Point – *the most radioactive reactor vessel removed in the US to date.*”

Consumers admits that the large-scale radiation releases from Big Rock were due in large part to “**significant [nuclear] fuel failures**” in the operating core, as well as to scores of radioactive waste and material leaks, spills, overflows, floods, and sloppy handling over the decades. [Big Rock Point Restoration Project LICENSE TERMINATION PLAN, Revision 1, July 1, 2004, Prepared by Consumers Energy Company: “Environmental Impact of Historical Fuel Failures,” Page 2-5; “Radiological Event History,” Page 2B-1.]

British Nuclear Group (BNG) America (formerly British Nuclear Fuels, Ltd., BNFL) went on to report: “**Because the reactor had been used for experimental purposes, it had elevated radiation levels and workers performing the decommissioning and the environment required more protection than is required when decommissioning reactors used solely for commercial electricity generation.**” [see <http://www.bngamerica.com/> under Projects/Commercial Work/Big Rock; accessed 11/28/2006]

The following tables, containing data provided by Consumers Energy to NRC, show that many millions of curies of radioactivity were spewed into the environment from Big Rock atomic reactor over the four decades of its operations.

These figures are taken from “Radioactive Materials Released from Nuclear Power Plants,” NUREG/CR-2907, by Brookhaven National Laboratory, Upton, NY 11973, prepared for Office of Information Resources Management, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 (NRC FIN B2234)

Table I. Airborne Effluents Comparisons by Year

Fission and Activation Gases (Total Curies)

1965	132,000
1966	705,000
1967	284,000
1968	232,000
1969	290,000
1970	280,000
1971	284,000
1972	258,000
1973	230,000
1974	188,000
1975	50,600
1976	15,200
1977	13,400
1978	18,900
1979	6,670
1980	21,500
1981	19,700
1982	12,900

1983	11,000
1984	141,000
1985	62,600
1986	67,900
1987	8,350
1988	7,770
1989	7,080
1990	5,550
1991	4,500
Total:	3,357,620

Table II. Airborne Effluents Comparison by Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

1970	0.13
1971	0.61
1972	0.15
1973	4.60
1974	0.16
1975	0.12
1976	0.05
1977	0.01
1978	0.00891
1979	0.0019
1980	0.0294
1981	0.0061
1982	0.00471
1983	0.00335
1984	0.132
1985	0.0825
1986	0.0756
1987	0.0294
1988	0.0507
1989	0.00487
1990	0.00571
1991	0.00307
Total	6.27

Table III. Liquid Effluents Comparison By Year

Tritium (Curies)

1970	54.0
1971	10.3
1972	10.4
1973	19.7
1974	5.10
1975	5.73
1976	2.41
1977	8.83
1978	4.05
1979	5.45
1980	6.18
1981	3.13
1982	2.98
1983	22.2
1984	1.11
1985	1.27
1986	0.351
1987	0.585
1988	0.347
1989	0.639
1990	0.589
1991	0.251
Total	166

[The figure for 1984 is questionable, because Consumers admits in its License Termination Plan that a 20,000 gallon spill of tritiated water into soil and groundwater took place, yet its admitted tritium release for that year appears low.]

Table IV. Liquid Effluents Comparison by Year

Mixed Fission and Activation Products (Curies)

1970	4.70
1971	3.50
1972	1.10
1973	2.70
1974	1.10
1975	2.02
1976	0.77
1977	0.392
1978	0.274

1979	0.903
1980	0.782
1981	0.391
1982	0.260
1983	0.0782
1984	0.148
1985	0.153
1986	0.0709
1987	0.273
1988	0.218
1989	0.232
1990	0.0364
1991	0.122
Total	20.2

Table V. Solid Waste Comparison by Year

Activity (Curies)

1977	968
1978	25.6
1979	277
1980	30.9
1981	317
1982	4.33
1983	274
1984	2.13
1985	114
1986	252
1987	2,300
1988	728
1989	371
1990	126
1991	On-site storage
Total	5,790

[Consumers admits in its License Termination Plan, Rev. 1, July 1, 2004 that it operated an open air, makeshift cement block “incinerator” pit from 1965 to 1978. Due to the presence of radioactive ash, and the admitted potential for radioactive contamination of the soil there, it appears that radioactive solid trash was burned in the incinerator. Thus, an unknown fraction of the curies listed above in the solid radioactive waste category could have been emitted into the air, to fallout onto the soil and surface waters downwind.]

Please note that the 3,357,812.47 curies of radioactivity that Consumers Energy reported to NRC was emitted into the environment by Big Rock is not an exhaustive figure. Fission

and activation gas emissions for the years 1962 to 1964 (likely very high, given the experimentation with nuclear fuels taking place at Big Rock then), as well as 1992 to 1997, still need to be added, once the necessary NRC documentation can be obtained by the author. Missing years for other radioactive release categories also have to be obtained. Regardless, even the radioactive releases that can be documented show that Big Rock was among the worst emitters of radioactivity of any single nuclear power plant in the country. This is all the more troubling, in that Big Rock was a small reactor (75 megawatts-electric) compared to others (typical reactors are 1,000 megawatts-electric).

Scores of Radiological Incidents Admitted

The company's "***Radiological Event History***" in its July 1, 2004 revised "License Termination Plan" lists ***63 radiation spills, leaks, overflows, and floods***, as well as ***sloppy handling of radioactive wastes and radioactively contaminated materials across the site***. (LTP, Page 2B-1)

In just one of these incidents, on May 31, 1984 ***Consumers leaked 20,000 gallons of tritium (radioactive hydrogen) into the soil and groundwater. It requested – and obtained – permission from the NRC for “on-site disposal” – that is, not cleaning up the spill, but rather leaving it in the soil and groundwater.*** The company and NRC admit that this and other tritium spills violated the Safe Drinking Water Act from 1984 to 2000, in terms of the concentration of tritium in the site's groundwater.

Consumers holds that the tritium is flowing into Lake Michigan over time, and that dilution lowers the risk to public health and the environment. But this amounts to treating the land as a radioactive septic field, and regarding Lake Michigan as an industrial sewer or atomic cesspool for radioactive discharges. This contradicts the U.S.-Canadian International Joint Commission's call for virtual elimination of toxic chemical and radioactive discharges into the Great Lakes.

It must be pointed out that tritium can bind into the human biological system at the most intimate level, including in DNA, for decades, causing cellular and genetic damage to this and future generations. And radioactive hydrogen is simply the first radioactive poison to enter the groundwater and Lake Michigan. Others will inevitably follow. Just recently, breakthroughs in the scientific understanding of plutonium's solubility in groundwater have shown this most dangerous of radioactive poisons can relatively quickly travel great distances in the environment, threatening human health. In fact, plutonium contamination has been documented in groundwater samples taken at Big Rock.

[see: <http://www.nirs.org/radiation/tritium/tritiumhome.htm>; <http://www.nirs.org/press/02-04-2000/1>; <http://www.sciam.com/article.cfm?chanID=sa003&articleID=000D842E-0C4E-1541-8B6B83414B7F0000&ref=rss> ; Dale Condra, ORISE Table 4, "Concentrations of Plutonium Radionuclides in Water Samples, Big Rock," in "Analytical Results for Water Samples Collected December 2, 2003 at Big Rock Point Nuclear Power Plant, Charlevoix, Michigan," Inspection Report Number 050-00155/2003-07)[RFTA 04-001], Oak Ridge Institute for Science and Education (ORISE), Jan. 27, 2004]

NRC has allowed Consumers to release the Big Rock site for “unrestricted use” so long as radiation doses are no higher than 25 millirems per year. But the Safe Drinking Water Act limits radiation in drinking water to only 4 millirems per year, calling into question the status of Big Rock’s aquifers, which Consumers admits are contaminated with tritium. In a startling admission, *Consumers indicates that its future radiation dose projections for residents on the site excludes the drinking water pathway*. This seems to indicate that Consumers is not protecting future visitors or inhabitants of the Big Rock site who may be exposed to radioactivity through drinking the groundwater. (See page 19 for additional information.) [License Termination Plan (LTP), Rev. 1, July 1, 2004, page 2-18].

Other incidents listed in Consumers’ “Radiological Event History” include:

[all passages are taken verbatim from Consumers LTP, unless otherwise indicated; author’s clarifying comments within brackets]

1960’s: Radwaste Tanks and Resin Disposal Tanks were overfilled on many occasions, often with water standing on the floor...

1960’s: wooden pallets and paint chips from the “Protected Area” (radiologically contaminated) dumped along the Woods Road.[author abbreviation of longer passage]

12-1-62 Pipe Tunnel was flooded...water was from the Condensate System. Leaks of this type have occurred throughout the operational life of the plant. Some of this contaminated water may have entered...into the sand below the building.

8-8-63 It is likely that contaminated water may have entered the ground below the tanks...

8-6-64 Discharge Canal dredging...discharge canal is the effluent pathway for the radwaste batch release of contaminated water...dredging spoils may have been stored on the narrow strip of land north of the protected area and on the beach...

11-13-64 Contamination was identified on top of the Canal Process Monitor intake piping...source of contamination is believed to have originated from this licensed release pathway...

6-8-65 ...the incinerator was a simple enclosure constructed of cement block. Some of the ashes that were removed from the incinerator have contained low levels of contamination. The incinerator was in operation between 1965 and 1978...There is a potential that contamination may be present in the soil at this location. [open air burning of radioactively contaminated solid wastes for 13 years, with unknown amounts of airborne radioactive emissions, and downwind fallout]

7-25-73 Contaminated material is discovered in a temporary shelter near the [smoke] stack base...The potential exists for soil and pavement in this area to be contaminated...

8-18-75 Uranylacetate was spilled in the Annex Building. The Public Affairs Department likely used this radioactive chemical during [public] presentations. [contamination dumped at Waters Township landfill?]

2-21-77 "The radwaste transfer cask liner was banged against the cask during the transfer of spent filters. Contaminated debris was spilled on the ground by the open air Radwaste Vault in the Radwaste Compound. The liner read 2.3 Rem/hr. Clean up efforts included the removal of contaminated snow. It is likely that contamination remained on the ground in this area." [at 2.3 Rem/hr, a worker would receive his annual "allowable" dose in just two hours.]

8-20-78 "Contamination was found in demineralized water collected at the chemistry lab and Machine Shop sample location. The source of contamination is suspected to have originated from a remote piping cross connection that established demineralized water as an alternate source for spent fuel pool make-up. The cross connect was removed, and in later years this contamination was reduced to trace levels found only in sample locations at lower elevations in the sphere. Many plant systems that are connected to the demineralized water supply have drain connections that may have provided a contamination release pathway. The investigation following this event could not identify a radioactivity release to the environment. This system is now surveyed on a routine basis."

9-28-78 The Waste Hold Tank was found overflowing to the asphalt below the tanks.

11-20-81 Approximately 10 cubic feet of contaminated resin were spilled at the north end of the Pipe Tunnel in the Turbine Building. The spill was an operational error resulting from improper valve line up. Clean up efforts included the removal of the top 3-5 inches of gravel from the expansion joint area between the Pipe Tunnel and the Sphere. Over the course of the next several days the area was decontaminated and resurveyed several times. Fields of 2-3 Rem/hr were recorded at contact with the floor. It is suspected that contamination remains in the sphere expansion area and may have also migrated through the floor expansion joints to the environment below. [at 2-3 Rem/hr, workers could have received their annual "allowable" radiation dose in just a couple of hours]

11-5-82 Contamination was identified in asphalt rubble located near the Stack Base. The following events have occurred in the vicinity of the Stack Base that could have resulted in the contamination of this area: temporary contaminated material storage area, resin sluicing and pumping, numerous Waste Hold Tank leaks and overflows, Condensate Storage Tank leaks. This area was also the transfer point for the movement of radwaste filters casks to the Radwaste Building.

11-16-82 A transport pathway was identified between the Chemistry Lab sink and the septic system. This sink was used for the disposal of non-contaminated water samples. Modifications were made to correct this situation in December 1982.

There is a potential that this sink may have been used for the disposal of contaminated waste. The septic tanks and drain field (liquid, sludge and soil) were sampled for suspected contamination. This and subsequent investigations and analyses have never identified radioactive contamination. The septic tanks are presently sampled and analyzed three times per year. [did this unauthorized dumping of radioactive liquids in a non-radiological drain system take place from 1962 to 1982?]

11-24-82 Contaminated blocks of cement from the radwaste vaults were moved to the northeast corner of the Contaminated Materials Warehouse. The cement had fixed contamination levels of 100 to 800 cpm. These blocks may have been stored along the power line at the time the contamination was discovered. [10 to 20 cpm, counts per minute, is considered a normal natural background radiation level]

5-31-84 Water was found weeping through the wall of the Radwaste Pump Room. The water originated from a leak in a two-inch aluminum line below the Turbine Building floor. It was calculated that approximately 20,000 gallons of condensate system water had leaked into the soil. A section of the floor in the southwestern corner of the turbine building was cut out and eight barrels of contaminated soil were removed and shipped as low-level radwaste. On August 16, 1985, Consumers Power requested NRC approval to retain the remaining contaminated soil. Total activity estimated at $1.4\text{E-}7$ microCi/g; nuclides present in 1984 included Mn-54, Cs-137, Co-60 and Ag-110m. The NRC granted approval on May 8, 1986. Voids were replaced by clean fill and the concrete floor was repaired. It is estimated that 5300 cubic feet of contaminated soil remained at this location. The summary section of this engineering study made the following conclusion: "Retaining the contaminated soil on-site with approximately 8 inches of concrete covering (turbine building floor) would result in no discernable impact on either the environment or on occupational and public health. The total activity is expected to be undetectable within seven years." [use of site as radioactive septic field, of Lake Michigan as radioactive industrial sewer]

11-9-84 Concrete blocks from the radwaste vault were found with activity levels of 100 to 500cpm. These are likely from the storage location along the power line. [10 to 20 cpm considered normal natural background]

9-30-86 Contaminated sludge was found in the heating boiler during a maintenance evolution. The source of this activity is believed to have originated from contaminated demineralized water make-up... Frisking performed on samples of the sludge detected 160 cpm over background and gamma analysis identified measurable levels of Co-60, Cs-134 and Cs-137. The sludge was removed and the area was decontaminated. A pathway existed for liquid drains from this system to have reached the environment. A new heating boiler was installed in 1990 and system drains are now batched by licensed effluent release. [Consumers simply got permission from NRC for these leaks into the environment]

2-13-87 Approximately 25 gallons of water is estimated to have leaked from the #1 Waste Hold Tank vent line due to overfilling. Less than one gallon was estimated to have reached the environment. Soil samples taken after this event identified $1.2\text{E-}5$ xCi/gm (sic) of Co-60, $3.4\text{E-}5$ xCi/gm (sic) of Cs-137, and $2.0\text{E-}6$ xCi/gm of Mn-54. Two and a half fifty-five gallon drums of

soil were removed from the area below the tank. The pit was approximately 3 feet long and 2 1/2 feet deep when soil levels reached <100 cpm above background and the clean-up effort was terminated. [units of measurement are not clear in document]

3-17-87 The Discharge Canal was dredged. A direct frisk of dredge spoils identified only background activity levels. The refuse was likely placed on the elevated stretch of property between the beach and the protected area fence that is north of the Containment Building. [was radiation monitoring adequate?]

6-30-87 Maintenance removes sludge from the heating boiler water-box. Gamma isotopic analysis identified a Cs-137 activity of $1.60\text{E-}6$ xCi/cc of sludge. During the process of clean-out approximately 500 gallons of heating boiler water was inadvertently released to the septic system. [Consumers has admitted that septic drain field has been left in place. What about radioactive contamination? Units of measurement again unclear.]

2-24-89 Drain line integrity is questioned in the floor drain of the Condensate Demineralizer Room (between cation and anion tanks). Maintenance personnel may have punctured the drain while attempting to unplug the line. Soil contamination is suspected below the concrete flooring.

9-19-91 A truckload of rip/rap and a concrete pad were frisked and released for storage along the power line behind the Swamp Warehouse. This material was likely from the canal dredging area.

8-13-93 The #1 Waste Hold Tank was overfilled and leaked to the ground. The area was boundaried off and decontaminated. [to what level of contamination?]

11-27-93 The overhead supply line to the Condensate Storage Tank was found leaking near the Turbine Building. A temporary cover was constructed to keep out rain and snow.

1-6-94 A leaking union was discovered on a section of the demineralized water transfer line located immediately west of the southern end of the Turbine Building. Snow and ice in the area below the piping leak was collected. The logbook entry gave no activity results for the samples. The leak was repaired on the same day as it occurred. [radiation levels were not reported, although contamination was clear]

6-27-94 Contractors removed asphalt and dirt from the Radwaste Compound in preparation for pouring a new cement slab in front of the loading bay. This asphalt and dirt were released to the power line storage area behind the Swamp Warehouse. This location from which these materials came was once a contamination area.

Area 1 - The edge of the asphalt directly west of the resin disposal tank plugs. Approximately 5-10 square meters. Nuclide activity levels in this area ranged from 4.7 to 13 pCi/gm of Co-60, and 2.8 to 100 pCi/gm of Cs-137. This is believed to have originated from the 1990 resin transfer work and the numerous spills and overflows of the Waste Hold Tanks that occurred over the years.

Area 2 - Approximately 5-10 square meters of soil west of the acid tank containment wall contained contamination levels up to 48 pCi/gm of Co-60 and 70 pCi/gm of Cs-137. This activity suspected to have originated from the 1984 Condensate Storage Tank leak and other spills and overflows of the Waste Hold Tanks. Clean up efforts were conducted at the completion of the Scoping Survey. [clean up to what levels of contamination?]

11-12-94 An activity analysis was performed on the storm drain effluent that empties into the west drainage ditch. Samples were taken from the eroded area near the drain and from nearby sediment and vegetation. The results of these analyses could not be located. However, it is known that radioactivity was limited to sediment passing through the drain and not to liquid effluent, and that a barrel was installed to collect sediment at the outfall of the drain. [but wouldn't radioactive particles, as well as dissolved radioactive substances, simply have flowed with the water through the barrel?]

6-6-95 Gravel containing Cs-137 was identified during repair of the Turbine Building roof. The gravel contained Cs-137 at soil background levels. The gravel is being stored under a tarp northwest of the sphere. [it appears, given the 2004 date on this document, and the use of the present tense, that radioactive gravel may have been stored under a tarp for nine years]

9-14-95 Heavy rains flooded an area below the [smoke] stack base. The storm drain at this location had been sealed due to ongoing resin transfer work and the seal was removed to allow flow to the west drainage ditch. A gamma analysis of the drain discharge to the drainage ditch identified radioactive contamination. No activity could be identified in additional samples taken of the sediment collection barrel and creek discharge to the lake. [was radiation detection adequate?]

8-23-96 Contamination was found (15 xCi/gm)[sic, prefix for unit of measurement unclear] in the collection barrel sediment of the storm drain discharge at the west drainage ditch. Samples were taken after a spent resin transfer evolution west of the Turbine Building. This location is the storm water collection source for the storm drain. An investigation identified the following known sources of contamination in this area:

- * Spills or the migration of contamination during spent resin and filter cask transfer
- * Waste Hold Tank overfills
- * Contamination resulting from past leaks in area piping

9-16-96 Two loads of blacktop were removed from an area near the stack base. Both loads were frisked and identified no activity above background levels. These two loads were released to the storage area along the power line behind the Swamp Warehouse. An additional load evaluated on the following day contained numerous areas of surface contamination ranging from 1,000 to 10,000 cpm. The contaminated pieces were segregated and taken to the Radwaste Building. The remaining asphalt was released to the power line storage area. [normal natural background radiation is at 10 to 20 cpm]

11-18-96 Roof repair was performed on the Turbine Building...Gravel

from this location was removed and placed in the storage location northwest of the Containment Building. The average activity of the gravel stored in this area is 0.72 xCi/gm Cs-137, and 0.07 xCi/gm Co-60. [prefix on unit of measurement unclear]

3-13-97 Contamination was found in the soil below a cracked floor drain near the caustic tank in the Condensate Pump Room. This room is located in the Turbine Building north of Track Alley. Samples collected identified Cs-137, Mn-54, Sb-124, and Cs-134. Area clean up efforts were performed and the drain has been plugged to prevent further use. Soils in this location are expected to contain low levels of contamination. [Sb-124 was not listed in company or NRC documents of radioactive contaminants still on site. Why not, if "Soils in this location are expected to contain low levels of contamination"?]

3-98 An investigation of a system process monitor alarm event identified contamination (Co-60 and Mn-54) in the sediment of the east storm drain. For a brief period, radioactive contaminants were introduced into the Service Water System that provides supply water to many radiologically clean systems. The contaminants entered through an improperly seated condenser warming line and were the result of wave-suspended radioactivity that was previously discharged to the lake in permitted releases. The sediment radioactivity is likely to have originated from the condenser vacuum pump which uses sealing water from the Service Water System and discharges to the storm drain. Sediment activity levels in the drain piping were approximately 0.8 pCi/gm. No activity was identified in the samples taken from other connecting sections of drain system. The entire length of this drain line has been decontaminated and is now monitored on a routine basis by the Operational Health Physics Department. Any potential piping leaks in this system would have presented a release pathway to the environment. [backwash from Lake Michigan radioactive enough to sound radiation alarms in discharge canal six months after reactor shutdown]

No Date: Anti-Contamination clothing in a yellow radwaste disposal bag was found in a void under the asphalt near the Equipment Lock Area. No contaminated materials were present in the bag. This void may be the result of wash out that was caused by modifications that were made to the Alternate Shutdown Building drainage. No further information is known concerning the origin of the radwaste disposal bag. [are there other additional on-site burials of waste that *do* contain contamination that have been forgotten?]

No Date: The integrity of all under ground piping is suspect due to inadequate cathodic protection. There is a potential of soil contamination in areas near underground piping carrying radioactive fluids.

No Date: Old steel from inside the sphere was stored in the area where the Swamp Warehouse is presently located. The steel was from plant modifications that were made over the years and is believed to contain low levels of contamination.

The following figure, from Consumers' July 1, 2004 revision to its License Termination Plan, shows the area of the Big Rock property that is likely the most contaminated – directly under and adjacent to the location of the nuclear power plant itself.

Figure 1. Big Rock Point Industrial Area (next page)



Figure 2-2. Big Rock Point Industrial Area

Source: BRP

It should be mentioned, though, that due to airborne and waterborne releases, as well as sloppy handling and storage of radioactive wastes and materials, areas other than this concentrated one are also likely radioactively contaminated.

Environmental Clean Up, or Lack Thereof

The radioactivity that the Big Rock reactor routinely released over the decades of nuclear power operation (1962 to 1997) has not been completely removed from the land and waters.[see <http://www.nirs.org/factsheets/greatlakespamp.pdf>]

Consumers Energy and the U.S. Nuclear Regulatory Commission (NRC) admit that “**residual radioactivity**” continues to contaminate the soil and groundwater at Big Rock, specifically the following 24 “fission and activation products” (radioactive poisons): Hydrogen-3 (tritium); Carbon-14; Manganese-54; Iron-55; Nickel-59; Cobalt-60; Nickel-63; Zinc-65; Strontium-90; Technetium-99; Silver-110m; Iodine-129; Cesium-134; Cesium-137; Europium-152; Europium-154; Europium-155; Plutonium-238; Plutonium-239; Plutonium-240; Plutonium-241; Americium-241; Curium-243; Curium-244.” [see NRC “Safety Evaluation” and “Environmental Assessment/Finding of No Significant Impact,” March 2005; Consumers “License Termination Plan, Revision 1,” July 1, 2004.]

Tritium (H-3, radioactive hydrogen) contaminates all three layers of groundwater at Big Rock, and has been -- and is likely still -- flowing into Lake Michigan. Consumers states that “The groundwater flow in all three of these units [underground aquifers] is northerly into Lake Michigan.” [LTP, Rev. 1, July 1, 2004, p. 2-26] Consumers goes on to state “any water carrying potential contamination would be at or beyond the northern limits of the site (at their discharge point to Lake Michigan) before mixing with upper portions of the bedrock aquifer...” [LTP, p. 2-28] Apparently, Consumers is untroubled by this projected tritium contamination of what it admits is potable groundwater, because it happens beyond the edge of its private property.

Consumers speaks of a “trapped subsurface source term of tritium,” and acknowledges persistent tritium contamination in the bedrock aquifer of 900 to 1,000 picoCuries per liter. [LTP, p. 2-28] NRC mentions even higher levels of contamination, up to 2,900 picoCuries per liter. [NRC “Environmental Assessment,” 3/11/2005, page 14]

Given that Consumers and NRC advocate “diluting” the radioactive contamination in Lake Michigan as an acceptable practice, this proposed recreation area could be called “Radioactive Septic Field State Park,” and Lake Michigan a radioactive industrial sewer.

Up until the year 2000, Big Rock’s groundwater contamination was one to two times higher than EPA’s Safe Drinking Water Act limits. In a startling admission, ***Consumers indicates that its future radiation dose projections for residents on the site excludes the drinking water pathway*** [March, 2005 NRC “Safety Evaluation” and “Environmental Assessment/ Finding of No Significant Impact (FONSI);” <http://www.nirs.org/radiation/tritium/tritiumhome.htm> ; License Termination Plan (LTP), Rev. 1, July 1, 2004, page 2-18].

This is a dangerously non-conservative assumption, in that the groundwater is admitted to be contaminated, and it cannot be assumed that Big Rock’s groundwater will not be used for drinking water in the future. In fact, in its LTP, Consumers admits that the bottom aquifer is potable water. Consumers assumes that the two upper aquifers are non-potable, but this assumes institutional controls will be maintained for as long as the radioactive poisons contaminate that groundwater – an unreasonably optimistic assumption.

Below are reproduced three figures from Consumers’ July 1, 2004 revision to its License Termination Plan showing the theoretical flow paths for contamination via groundwater into Lake Michigan. “Figure 2-1” from the License Termination Plan, shown on page 25 below,

shows the extent of the “Impacted Area” (potentially radioactively contaminated) that Consumers will admit to.

Figure 2. Tritium Plume in Shallow Groundwater Zone. (next page)

Figure 3. Tritium Plume in Intermediate Groundwater Zone. (page 21)

Figure 4. Tritium Plume in Bedrock Groundwater Zone. (page 22)





Figure 2-14. Tritium Plume in Intermediate Groundwater Zone



Figure 2-15. Tritium Plume in Bedrock Groundwater Zone

Page 2-75

Lake Michigan, and Lake Michigan sediments, have very likely not been adequately investigated – if at all -- by the company or federal regulators for radioactive contamination emitted from Big Rock. NRC and Consumers Energy have assumed that so-called adequate dilution of the radioactive poisons has taken place, but what about bio-magnification of radioactivity in Great Lakes organisms, as documented by the International Joint Commission in its 1999 Nuclear Task Force's "REPORT ON BIOACCUMULATION OF ELEMENTS TO ACCOMPANY THE INVENTORY OF RADIONUCLIDES IN THE GREAT LAKES BASIN (<http://www.ijc.org/rel/boards/nuclear/bio/index.html>)"? In 1998, six months after Big Rock had permanently shut down, radioactivity suspended in Lake Michigan water -- likely bio-magnified in algae -- was backwashed up the discharge canal, causing radiation monitor alarms to sound. [See 3-98 incident report, above] Radioactive contamination in Lake Michigan sediments could wash back ashore over time, be picked up on the wind as particles, and be inhaled by visitors to the state park at Big Rock. Children could also ingest radioactive particles contaminating the surface of the soil and beach.

Referring to the area of the Discharge Canal, NRC indicates that Lake Michigan sediment radioactive contamination is quite likely: "Radioactivity originating from licensed liquid release

is present in this area; characterization surveys identified elevated levels of radioactivity concentrate in the sediment below the water's surface." Of course, where Consumer's "private property" ends at the Discharge Canal and where Lake Michigan begins makes little difference to the ecosystem, which is radioactively contaminated throughout. [NRC "Environmental Assessment," 3/11/2005, page 10]

Although Consumers asserts that the Big Rock site is a "Greenfield," their own words and documents indicate otherwise. The author attended a meeting in February, 2003 between Consumers representatives and U.S. Nuclear Regulatory Commission staff at NRC headquarters in Rockville, Maryland. At the meeting, Consumers proposed to walk away from much of the radioactive mess they've made on the site. Claiming they did not want to disturb the radioactive contamination in the sediment in a canal leading out into Lake Michigan, Consumers proposed to not even look at how badly or far out into Lake Michigan the contamination extended. However, the following figure from the License Termination Plan indicates that some level of assessment was carried out.

Figure 5. Discharge Canal Survey Unit.



Figure 2-11. Discharge Canal Survey Unit

At the meeting, Consumers representatives also said that the groundwater under the site would wash the radioactive contamination into Lake Michigan, and since that was off their

property, they needn't worry about it. NRC, the mission of which is supposedly to protect public health and safety and the environment, did not object to that twisted logic.

[<http://www.record-eagle.com/2003/feb/22letter.htm> : Kevin Kamps, "Profits over safety?", Letters to the Editor, Traverse City Record Eagle, February 22, 2003]

Consumers' flippant, carefree attitude shouldn't be a surprise, however. The company that Consumers hired to "clean up" Big Rock - British Nuclear Fuels. Ltd. - has turned the Irish Sea into one of the most radioactively contaminated bodies of water on earth, due to the large-scale discharges of plutonium, technetium, and other radioactive poisons from its Sellafield nuclear facility in the U.K. BNFL has discharged over 1,000 pounds of plutonium into the Irish Sea, when a mere microscopic speck inhaled into the human lung can initiate lung cancer. Wave action has washed plutonium back ashore, throwing it back up into the air as sea spray. Plutonium contaminated dust has been documented in residences in neighboring villages. An entire yard had to be dug up and treated as radioactive waste, due to radioactive pigeon droppings under bird feeders there. Plutonium in children's teeth has been documented hundreds of miles from Sellafield, with levels decreasing with distance from BNFL's facility. Governments from Ireland to Scandinavia have objected to the radioactive contamination of the seafood supply, and have launched legal interventions at the European Union. Radioactivity from Sellafield has been detected as far away as Canadian Arctic waters. In April, 2005 BNFL suffered another major radioactive leak at Sellafield. A full 90% of the entire radioactive emissions and discharges from the British nuclear power industry (including all reactors) emanate from the single reprocessing site at Sellafield, run by BNFL. Parents who work at BNFL have elevated incidences of stillbirths, leukemia, and non-Hodgkin's lymphoma in their children. ***This*** is the company that Consumers hired to "clean up" Big Rock, which hung a hand-made "BNFL, Ltd." clapboard sign in front of its office in a quaint rented house on the main street of Charlevoix. The "Ltd." stands for Limited, as in Liability. As in not responsible for any messes it makes.

[<http://www.corecumbria.co.uk/> ; <http://www.nirs.org/factsheets/rwreprocessfactsheet.pdf>]

BNFL, now called BNG (British Nuclear Group) America, is now owned by EnergySolutions of Salt Lake City, Utah. Radioactive wastes from Big Rock have been buried at EnergySolutions' "Envirocare" dump in Clive, Utah – including a train load that derailed in Clare County, Michigan in summer 2006 [<http://www.nirs.org/press/06-20-2006/1>]. Big Rock has also dumped radioactive wastes at the Barnwell dump in South Carolina, including its reactor pressure vessel, which also suffered numerous transport mishaps along the way.

[<http://www.nirs.org/radwaste/hlwtransport/nukewatch122003.htm>] As an indication of how much radioactivity Big Rock generated, BNG America reported that Big Rock's reactor pressure vessel was the most radioactive one yet decommissioned in the U.S.

[http://www.bngamerica.com/index.php?load=projects&page=index&op=project_fetch&project_id=1]

Consumers also admits that ***"the potential exists that residual radioactivity may be present in subsurface areas of the drainfield,"*** but still intends to leave the drainfield in place. In its 2nd revision of the License Termination Plan, Consumers states:

All equipment, components and structures, including subsurface foundations, but *excluding an onsite septic drainfield* and the plant intake water pipe, will be removed rather than undergo remediation. *The drainfield is being retained in place, with the concurrence from local and state health officials. The drainfield is in an impacted area, but characterization studies show that it will meet site release criteria without remediation.*

[License Termination Plans: Rev. 1, 2004, Page 2-37; Rev. 2, 2005, Page 4-2]

Thus, Consumers is knowingly leaving the radioactively contaminated drain field in place. How such abandonment of radioactively contaminated infrastructure comports with NRC's supposed requirement of ALARA (keeping radioactive doses As Low As Reasonably Achievable) is unclear.

On Page 2B-10 of the LTP, Rev. 1, Consumers reports on 5-99 that "Trace levels of contamination were found in the east storm drain..." It goes on to state that "removal of storm drains will be a requirement for license termination." Are those storm drains somehow related to the drainfield mentioned above? Have they been removed, as promised?

Also of concern are the literally shallow requirements for nuclear power plant decommissioning and release of the site for "unrestricted use" under the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) subscribed to by the U.S. Environmental Protection Agency, the NRC, the U.S. Department of Defense, and the U.S. Department of Energy. Soil analysis and remediation only need take place to a depth of 15 centimeters (5.9 inches) under MARSSIM, a point echoed in Consumers' Big Rock decommissioning documents, despite clear evidence of contamination at deeper locations in the soil and groundwater. It is not clear that any other federal or state regulations required Consumers to investigate deeper than six inches down for evidence of radiological contamination, despite knowing that contamination extends much deeper than that at Big Rock in the soil, subsurface, and groundwater.

Since Big Rock dealt directly with NRC for regulation, as opposed to an "agreement state" state agency, NRC did not address toxic, hazardous chemicals during decommissioning. Consumers attempted to simply say that no such issues existed at Big Rock, but Michigan Department of Environmental Quality did not immediately agree with that.

A Memorandum of Understanding between EPA and NRC focuses upon 25 radioactive contaminants to address during site decommissioning. But what of the dozens, even hundreds, of additional radioactive poisons generated by nuclear fissioning at Big Rock, many of which also escaped into the environment? [MARSSIM, NUREG-1575, Rev. 1; EPA 402-R-97-016, Rev. 1; DOE/EH-0624, Rev. 1; August 2000]

Lakeshore Contaminated

Although the one and a half miles of "undisturbed" Lake Michigan shoreline is a major selling point for a state park at Big Rock, Consumers admits (in the figure below, from its July 1,

2004 revision to its License Termination Plan) that much of the shoreline is potentially contaminated with radioactivity.

Figure 6. Big Rock Point Owner-Controlled Area [showing “Impact Area,” that is, potentially radioactively contaminated]

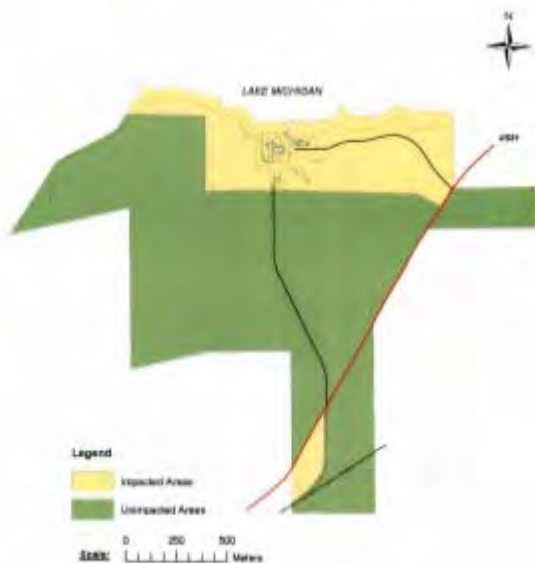


Figure 2-1. Big Rock Point Owner-Controlled Area

Duration of Radiological Hazards

Here is the list of other radioactive poisons Consumers Energy and the U.S. Nuclear Regulatory Commission admit are in the soil and ground water at Big Rock [from page 3 of the NRC “Safety Evaluation,” March 24, 2005]:

“24 radionuclides present at the site: H-3; C-14; Mn-54; Fe-55; Ni-59; Co-60; Ni-63; Zn-65; Sr-90; Tc-99; Ag-110m; I-129; Cs-134; Cs-137; Eu-152; Eu-154; Eu-155; Pu-238; Pu-239/240; Pu-241; Am-241; Cm-243/244. These radionuclides contain fission and activation products...”

The NRC report goes on to state:

“the licensee identified...the following radionuclides as contributing to dose after license termination: H-3; Mn-54; Fe-55; Co-60; Sr-90; Cs-137; Eu-152; Eu-154; and Eu-155.”

We question why such radioactive poisons as Pu-239, Sr-90, Tc-99, and others acknowledged as “present at the site” are excluded from the list “as contributing to dose after

license termination.” They would contribute to dose far into the future, given their long hazardous persistence and biologically interactive properties.

Each radioactive poison has its distinctive hazardous persistence, some in the centuries, others in the millions of years. Certain radioactive poisons tend to target their risks at particular human organs: Sr-90 at bones, Cs-137 at muscles (including the heart), and Pu-239 at the lungs, for example. Please see the following two tables.

Table VI. Hazardous persistence of radioactive contaminants at Big Rock.

Radioactive Poison	Half-Life*	Hazardous-Life**
H-3, Tritium (radioactive hydrogen)	12 years	120 years
C-14, Carbon-14	5,730 yrs	57,300 yrs
Mn-54, Manganese-54	312 days	8.5 yrs
Fe-55, Iron-55	2.73 yrs	27 yrs
Ni-59, Nickel-59	76,000 yrs	760,000 yrs
Co-60, Cobalt-60	5.27 yrs	53 yrs
Ni-63, Nickel-63	100 yrs	1,000 yrs
Zn-65, Zinc-65	244 days	6 yrs 8 months
Sr-90, Strontium-90	28.8 yrs	290 yrs
Tc-99, Technetium-99	211,100 yrs	2,100,000 yrs
Ag-110m, Silver-110m	250 days	6 yrs, 10 months
I-129, Iodine-129	16 million yrs.	160 million yrs
Cs-134, Cesium-134	2 yrs	20 yrs
Cs-137, Cesium-137	30 yrs	300 yrs
Eu-152, Europium-152	13.5 yrs	135 yrs
Eu-154, Europium-154	8.6 yrs	86 yrs
Eu-155, Europium-155 (table continued, below)	4.8 yrs	48 yrs

Radioactive Poison	Half-Life*	Hazardous-Life**
Pu-238, Plutonium-238	88 yrs	880 yrs
Pu-239, Plutonium-239	24,110 yrs	241,100 yrs
Pu-240, Plutonium-240	6,563 yrs	65,630 yrs
Pu-241, Plutonium-241	14.4 yrs	144 yrs
Am-241, Americium-241	432 yrs	4,320 yrs
Cm-243, Curium-243	29 yrs	290 yrs
Cm-244, Curium-244	18 yrs	180 yrs

*The “half-life” of a radioactive substance is the time period it takes for half the material to radioactively decay into another material. Note that the decay product, or radioactive “daughter,” may itself also be radioactive and/or hazardous, with its own half-life.

**The “hazardous-life” of a radioactive substance is, at a minimum, ten times as long as its half-life. It could even be twenty half-lives long. Twenty half-lives would be twice as long as the “hazardous lives” reported in the table above, but would be a more conservative measure (as in requiring longer protective measures to safeguard human health)

[Half-lives taken from the Berkeley Laboratory Isotopes Project’s ‘Exploring the Table of Isotopes,’ May 22, 2000, downloaded on November 13, 2006]

Impacts on Human Health

Table VII. Radionuclides at Big Rock: Type of Radiation, Biological Effect

Radioactive Poison	Type of Radiation Emitted	Biological Effect/Organ Targeted
H-3, Tritium (radioactive H)	Beta particle	Goes anywhere in human body H goes, including DNA; can stay in body for 10 years or more
C-14, Carbon-14	Beta particle	Once ingested or inhaled, distributed and bound throughout human tissue just like non-radioactive carbon
Mn-54, Manganese-54	Gamma ray	Mn is essential for a broad range of enzymes, which are essential to cellular function; gonads

(table continued below)

<u>Radioactive Poison</u>	<u>Type of Radiation Emitted</u>	<u>Biological Effect/Organ Targeted</u>
Fe-55, Iron-55	X-ray; Auger electron emitter (travels like a drill in a swirling pattern)	Hemoglobin, liver and spleen
Ni-59, Nickel-59	Electron capture	Fairly ubiquitous in human system
Co-60, Cobalt-60	Beta, Gamma	Liver, kidney, bones, ovaries/testes
Ni-63, Nickel-63	Beta	Fairly ubiquitous in human system
Zn-65, Zinc-65	Gamma	Ubiquitous in human system; gonads
Sr-90, Strontium-90	Beta particle	Bone
Tc-99, Technetium-99	Beta	Kidney
Ag-110m, Silver-110m	Beta, Photon	Whole body (also liver, brain)
I-129, Iodine-129	Beta, Gamma	Thyroid Gland, ovaries
Cs-134, Cesium-134	Beta, electron capture	Muscle, including heart; ovaries/testes
Cs-137, Cesium-137	Beta, Gamma	Muscle, including heart; gonads
Eu-152, Europium-152	Gamma, electron capture, positron	effect unknown
Eu-154, Europium-154	Gamma, beta, electron capture	effect unknown
Eu-155, Europium-155	Beta, gamma	effect unknown
Pu-238, Plutonium-238	Alpha, Gamma	Skeleton, liver, lung
Pu-239, Plutonium-239	Alpha particle	Skeleton, liver, lung, ovaries/gonads
Pu-240, Plutonium-240	Alpha, gamma	Skeleton, liver, lung, ovaries/gonads
Pu-241, Plutonium-241	Beta, Alpha, Gamma	Skeleton, liver, lung, ovaries/gonads
Am-241, Americium-241	Alpha, Gamma	Bone, liver, muscle; Lungs when inhaled
(table continued below)		

Radioactive Poison	Type of Radiation Emitted	Biological Effect/Organ Targeted
Cm-243, Curium-243	Alpha, Gamma	Bone marrow
Cm-244, Curium-244	Alpha, Gamma	Bone marrow

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.

If you ingest alpha and beta particle 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 necessarily immediate. Exposure to radiation can cause cancer many years later, after a prolonged latency period. Chronic exposure to even very low levels of radiation can be dangerous over time.

[Sources: Cindy Folkers, NIRS, email to author, 11/20/2006; “Ionizing Radiation” wall poster, based on a drawing by Susanna Natti and Candace Kaihlanen, on page 8 of “The Nuclear Fix: A Guide to Nuclear Activities in the Third World,” by Thijs de la Court, Deborah Pick, and Daniel Nordquist, World Information Service on Energy (WISE), Amsterdam, the Netherlands, 1982. An earlier version is also available in “No Nukes,” by Anna Gyorgy & Friends, South End Press, 1976, 1979. Also see “No Immediate Danger: Prognosis for a Radioactive Earth,” by Dr. Rosalie Bertell, The Women’s Press Ltd., London, 1985, particularly Part One, “The Problem: Nuclear Radiation and its Biological Effects.”]

Given that Plutonium-239, the stuff of thermonuclear bombs, is probably the most-infamous of those very long lasting radioactive poisons listed above, opponents to Consumers Energy’s proposed recreational area at Big Rock have dubbed it: “Plutonium State Park.” Pu-239 will remain deadly, in even microscopic amounts, for hundreds of thousands of years. It is worth noting that Big Rock experimented with MOX fuel (mixed-oxide uranium/plutonium). From 1969 to 1977, Big Rock was licensed to use mixed-oxide fuel through a cooperative R&D program that included GE, Exxon, and Consumers Power and was sponsored by the Edison Electric Institute. Use of experimental fuels worsened Big Rock’s radiation emissions, as documented above. Plutonium is also amongst the most hazardous of radioactive poisons when released into the environment, calling into question its use in experiments at Big Rock in the first place. [<http://www.ans.org/pubs/magazines/nn/docs/2006-11-3.pdf>]

Was Big Rock and its surrounding area regarded by nuclear establishment decision makers in industry and government as a “low use segment of the population”? This term was used by atomic weapons testing decision makers in the Atomic Energy Commission – forerunner to NRC -- for the Mormons, Native Americans, and ranchers of southwestern Utah, immediately

downwind of the Nevada Test Site, when it was decided to begin atmospheric weapons testing in 1951. Perhaps so, given the following remarks from NRC:

“Charlevoix is the closest urban center and does not currently nor foreseeably fall within the population center definition in 10 CFR Part 100 [this despite Charlevoix being less than four miles away from Big Rock!] The topic of Population Distribution was evaluated by the NRC as part of the Systematic Evaluation Program [SEP]...This review resulted in an assessment and evaluation...which found that based upon an examination of present and projected population data and on observations made during a visit to the site in July 1979, that neither Charlevoix nor any other city within 30 miles of the plant is now, or is likely to become in the foreseeable future, a population center, (more than 25,000 residents), as defined in 10 CFR Part 100. Further, the NRC concluded that the low population zone and population center distances specified for the Big Rock Point site remain valid and the site is in conformance with the distance requirements of 10 CFR Part 100 in that the population center distance is more than one and one third times the distance from the reactor to the outer boundary of the low population zone...This completed the evaluation of this SEP Topic. Since the plant conforms to current licensing criteria, no additional SEP review is required.” [Part I of Rev. 10 to Big Rock Point Plant Updated Final Hazards Summary Report, Sept. 17, 2002]

23 years of population growth seem to have been disregarded by the above document – as if small rural populations are less deserving of protection from radioactivity than are large urban populations. Such an attitude on NRC’s part amounts to environmental injustice.

[<http://www.nirs.org/ejustice/ejustice.htm>]

Tritium also has lessons to teach about radio-toxicity at Big Rock. Tritium is harmful to human DNA and cells, carcinogenic, mutagenic, etc. Water is in every cell of the human body. Therefore, water contaminated with radioactive hydrogen (tritium) can enter, contaminate, and bombard any cell in the body. A beta particle from a tritium atom travels at faster than the speed of a jet airplane, and can do tremendous damage to any cell that it contacts. [Kay Drey, NIRS Board Secretary, St. Louis, MO, telephone interview with author, 11/29/06; see also <http://www.nirs.org/radiation/tritium/tritiumhome.htm>]

It is scientifically established that every exposure to radiation increases the risk of damage to tissues, cells, DNA and other vital molecules. Each exposure potentially can cause cell death, genetic mutations, cancers, leukemia, birth defects, and reproductive, immune and endocrine system disorders. [http://www.nirs.org/factsheets/drey_usa_pamphlet.pdf, especially point #14]

In 2005, in its Seventh “Biological Effects of Ionizing Radiation” (BEIR) report, the National Academies of Science reported that any radiation dose, no matter how small, carries a health risk. In fact, low doses of radiation may carry a disproportionate risk, unit for unit, when compared to high doses of radioactivity. There is no such thing as a safe dose of radiation, despite NRC’s assurance that radioactive contaminants at Big Rock are below “permissible” levels. “Permissible” or “allowable” radiation doses are not “safe,” despite nuclear establishment assurances to the contrary.

[http://dels.nas.edu/dels/rpt_briefs/beir_vii_final.pdf ; “U.S. Radiation Panel: No Radiation Dose Safe,” WISE/NIRS Nuclear Monitor, July 15, 2005; <http://www.nirs.org/factsheets/nosafedose.pdf>]

Liability

A 351-acre tract (of the 563-acre property), with more than a mile of “undeveloped” -- but likely radiologically-impacted -- Lake Michigan shoreline, has been offered for sale by Consumers to the State of Michigan, in order to establish a public park or recreation area. Consumers is asking the state to pay it \$20 million for the property that the company contaminated; ironically, this might shift future legal liability onto the state.

Given the ambiguity over transfer of liability, state taxpayers might assume the legal burden for contamination or problems discovered at this site in the future. Trust Fund board members should not agree to saddle residents with such a potential very long-lasting radioactive burden on the beaches and shores of a state park.

Among the most troublesome questions is the wisdom of the state’s taxpayers potentially assuming legal liability for land with a history of radioactive releases and dangerous nuclear waste that will be there indefinitely. Despite these long-term risks, state and federal officials have declined to conduct an environmental impact statement, settling instead for a lower level “environmental assessment.”

On November 30, 2006 the Associated Press reported that “ [Tim] Petrosky [Consumers Energy’s spokesman at Big Rock] would not comment on liability issues, saying they were a subject of negotiations with the state.” The article went on to report that:

Petrosky said Big Rock Point emitted less than 1 percent of the radiation allowed under its federal permit during its 35 years of operation. "These releases were short-lived radioactivity that naturally dissipated," he said.

The plant's decommissioning included extensive testing for residual contamination that showed the area was safe, he said. Recent groundwater tests turned up no detectable levels of tritium, he said.

"Overwhelming scientific data proves that there would be no risk to anyone using the Big Rock Point property," Petrosky said.

[<http://www.mlive.com/newsflash/michigan/index.ssf?/base/business-10/1164842989300200.xml&storylist=newsmichigan> ; John Flesher, “Environmentalists debate recreation area at former nuclear site,” A.P. 11/29/2006.]

Petrosky's assurances beg the question, then, why would Consumers object to retaining liability, if the site is so clean and safe? What is there to negotiate with the state, unless Consumers is trying to offload the legal liability for the radioactive contamination it caused at Big Rock onto the backs of state taxpayers?

Petrosky claims that "Big Rock Point emitted less than 1 percent of the radiation allowed under its federal permit," yet NRC documents, based on company records and analyses, reveal that up until the year 2000, the tritium contamination in Big Rock's groundwater violated the Safe Drinking Water Act maximum contamination level of 20,000 picocuries per liter (in nature, tritium is present in water in concentrations of 25 picocuries per liter or less, due to cosmic radiation; see <http://www.nirs.org/radiation/tritium/tritiumhome.htm> .)

It must also be emphasized that "permissible" or "allowable" radiation doses, as Petrosky seems to be referring to above, are not necessarily "safe" doses. In fact, as discussed just above concerning the National Academies of Science BEIR VII report, no dose of radiation is "safe."

Petrosky also claimed that "Recent groundwater tests turned up no detectable levels of tritium..." But NRC documents admit that contamination up to 2,900 picocuries per liter of tritium was being detected in site groundwater. [[NRC "Environmental Assessment," 3/11/2005, page 14] Even 2,900 picocuries per liter is more than a hundred times higher than natural background, certainly detectable – and detected, recently.

Petrosky is also quoted in the A.P. article saying "These releases were short-lived radioactivity that naturally dissipated..." The vast amount of artificial radioactivity generated at Big Rock for forty years was not natural. In fact, certain radioactive poisons, such as plutonium, existed only in the most trace amounts in nature on Earth before the Atomic Age artificially generated them in large quantities. One percent or more of the 64 tons of high-level radioactive waste at Big Rock is plutonium – 1,280 pounds of plutonium. [percentage figure from Dr. Arjun Makhijani, Institute for Energy and Environmental Research, Takoma Park, MD] And certain radioactive poisons that both company and NRC documents admit are still present at Big Rock are anything but "short-lived." Tritium, for example, remains hazardous for 120 years. Cesium-137 and Strontium-90 remain hazardous for around 300 years, at a minimum. Plutonium-237 is deadly for 240,000 years; Iodine-129 for 160 million years. Hazardous lives are listed in the table above, on page 27.

A nuclear industry analyst warned that "a third party using more sensitive instrumentation" could identify "residual radioactivity on or in materials" at decommissioning sites such as Big Rock. Thus, better radiation detection tools and monitors could uncover presently unknown or undetected radioactive contamination in the soil, groundwater, plants and animals, Lake Michigan, and its sediments surrounding the Big Rock site. [Jas S. Devgun, Ph.D., Senior Project Engineer/Project Manager, Sargent & Lundy LLC, Chicago, IL, presentation entitled "Impact of Lack of Consistent Free Release Standards on Decommissioning Projects and Costs," at the Waste Management '02 Conference, Feb. 24-28, 2002, Tucson, AZ]

In short, the risks are too high, and the unknowns too great, for the State of Michigan to assume legal liability for the Big Rock site.

Opportunity Costs: Other Potential Park Sites

The bulk of the \$20 million purchase price for the Big Rock site would come from the state's Natural Resources Trust Fund. This fund contains public money earned from oil and gas revenues and earmarked to enhance public recreational opportunities. Since this proposal competes for limited Trust Fund dollars with many other worthy projects, none of which have such a toxic legacy or security concerns, it requires a careful analysis of the drawbacks and risks.

There are more than 160 applicants for trust fund dollars, many for spectacular lands including sand dunes, wetlands, riverfront and lakefront property and forests – none of which have nuclear waste and radioactive contamination issues. The Trust Fund board members should not shortchange these applicants to invest in a site that will have dangerous radioactive waste for the foreseeable future, and that has a dubious environmental legacy of contamination.

The 351-acre tract would cost the state \$3 million this year, and an additional \$16.3 million in future years. The parkland at Big Rock would exclude a 100-acre “buffer zone” forbidden to the public because of its proximity to 64 tons of highly radioactive nuclear fuel rods patrolled by armed guards.

All told, the request is among \$63 million worth of projects under consideration for the \$35 million available.

Although Big Rock has been declared clean and open for “unrestricted use” by contractors for its owner, Consumers Energy Co., as well as the NRC, questions remain as to the residual contamination and radiation, and the thoroughness of the environmental assessment.

Conclusion

The many concerns and questions raised above remain unaddressed. The establishment of a state park (or residential development) at Big Rock is not prudent, in terms of public health, safety, and security. With many other applicants offering potential park sites without such complications, the state should not choose to favor this one. We urge the State of Michigan to reject this proposal.