

# Environmental Defense Institute

## News on Environmental Health and Safety Issues

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### Federal District Court Orders DOE to Release FOIA Documents

In a victory for open government, Wyoming Federal District Court Judge William F. Downes has ordered the Department of Energy ("DOE") to turn over some 1100 pages of documents evaluating the safety of the Advanced Test Reactor ("ATR") at the Idaho National Laboratory. In a lawsuit filed by Keep Yellowstone Nuclear Free ("KYNF"), the Environmental Defense Institute, and David McCoy, nearly 4 years ago, Judge Downes yesterday rejected the DOE's claims that it could withhold the documents and directed them to release the critical safety documents that KYNF has been seeking under the Freedom of Information Act within 10 days.

KYNF has been anxiously awaiting this decision because they maintain that the redacted documents contain the DOE's assessment of the safety and consequences of an accident at the controversial ATR, the largest nuclear test reactor in the world. We believe the public has a right to be fully informed of the likelihood and consequences of an accident at the ATR. We've been seeking these documents since we began focusing on the safety of the ATR, and we are thrilled with this much anticipated ruling," said Mary Woollen, Executive Director of KYNF. "I feel vindicated that the system of justice is working here in Wyoming, and that the decision of Judge Downes advances values important to our society: transparency and accountability in our government." Woollen added.

Yesterday's order "reaffirmed" the Court's September 24, 2007 decision in this case. In that 2007 decision the Court rejected the DOE's arguments that the Documents could be withheld for security reasons. The Court, balancing the need for open government with the possible threat of a terrorist attack at INL, stated "blocking public access to information necessary to critically assess the ATR's safety runs the risk that government decisions to extend the life of the ATR will go unchecked, with the possibility of a devastating nuclear accident 100-miles from Yellowstone and Grand Teton National Parks, crown jewels of this country's national parks."

But, the Court stated, "in light of the weighty considerations...the Court believes it prudent to err on the side of caution." Thus, the Court ordered an "in camera" inspection of the documents. Judge Downes therefore met with DOE counsel and experts and reviewed the documents to determine whether redactions could be made, such as the exact location of certain systems or equipment, before the documents were released. Now, having completed that

review, the Court has ordered that the documents be released.

"This decision protects both Greater Yellowstone, and the Nation's core democratic values," said Mark Sullivan, attorney for the Plaintiffs. "It's no secret that there is a 40 year old nuclear reactor at INL and that it has major safety shortcomings. DOE's own people have publicly stated that. We want to know more about what those safety shortcomings are, what risks they pose to surrounding communities and the environment, and now hopefully we can constructively embark upon this path," said Sullivan.

"We fully expect that the full release of these documents will shine a bright light on many problems at the ATR relating to its age, wear, and inability to withstand a significant seismic event," said KYNF Executive Director Mary Woollen. <sup>1</sup> For more information call 307-413-8679.

Attorney Mark Sullivan adds: "The Court has ordered DOE to release all four documents sought by KYNF, EDI and McCoy, totaling approximately 1,400 pages. The documents are safety assessments that show the likelihood and consequences of an accident at the ATR. They are:

1. The critical chapter - 15 of the Upgraded Final Safety Analysis Report (UFSAR). This chapter provides detailed descriptions of accident scenarios at the ATR. We are seeking this chapter for both the current (as of 2006) and 1998 UFSAR;
2. The "Emergency Management Hazards Assessment Document HAD-3;"
3. The "Update of ATR Break Spectrum and Direct Damage Loss of Coolant Accident Frequency Analysis;"

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<sup>1</sup> Keep Yellowstone Nuclear Free, Environmental Defense Institute, and David McCoy v. USDOE, Case No. 06-CV-205-D.

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- Experimental reactor that is 45 years old and well beyond its 20 year design life;

- No radiation containment dome required of all commercial nuclear power reactors;
- Problematic and badly deteriorating cooling system;
- History of shut-downs after safety reviews;
- Used to produce deadly radioactive isotopes."

Indicative of the hazard posed by the ATR is the INL Operations Report (9/20/09) states that on "Sept. 16: It has been determined that evacuation sirens located at the Advanced Test Reactor Complex are mounted within office buildings that are not designed to withstand significant seismic events. A review of the safety analysis at the facility is underway."

## ATR Experimental Fuel Failure Show in DOE Documents Significant Radioactive Iodine Releases

As previously reported in these pages, one of the missions of the Advanced Test Reactor (ATR) is to irradiate new reactor fuels – in support of the DOE Advance Gas Reactor Fuel Development and Qualification Program. This is the first of eight similar test experiments to test the fuel cladding's ability to provide a barrier to fission product release in a high temperature (1,250 degrees Celsius) and high radiation condition. Inside the ATR reactor, the fuel specimens were subjected to neutron irradiation many times higher than what they would experience inside a High-temperature Gas Reactors. A recent fuel test program called AGR-1 on "uranium oxi-carbide in a graphite matrix" found that the fuel coatings failed - releasing radio-iodides and cesium into the reactor and released to atmosphere.

DOE conducted a 12/06 interim analysis of radioactive Iodine-135 releases after the first six week fuel testing program ended when the ATR was "scrammed" (emergency shutdown) likely due to fuel failure. According to DOE's report, this program continued for an additional 30 weeks (2.5 yrs) to June 2009. It must be noted that numerous species of longer-lived radioactive iodine in addition to I-135 (I-129, I-131, I-132, I-133, and I-134) as well as many other radionuclide fission products (i.e., Krypton, Xenon, Cesium and Tellurium) were also released in significant quantities.<sup>2</sup>

Specifically, the AGR-1 report acknowledges release of 1,200,000 pico-curies of I-135 over the 6 week monitoring. As the report also acknowledges the program lasted 30 weeks; the estimated I-135 releases are about 2,327,400 pico-curies.<sup>3</sup> This is a significant release that EDI believes violates radiation emission standards as the discussion below documents. Pico-curie (one trillionth of one curie) units are used here because they are used by regulatory agencies due to their extreme biological hazard to human health. " **If EPA and State of Idaho regulatory limits on radiation exposure to the public from both DOE and commercial nuclear power reactors, it indicates violations.**<sup>4</sup>

<sup>2</sup> Emergency Management Hazards Assessments for Reactor Technology Complex, 2004, HAD-3 page 132. This report acknowledges release of 2,617,999 Curies of these isotopes released in ATR fuel failure accident.

<sup>3</sup> "Determination of the Quantity of Iodine-135 Released from the AGR-1 Test Fuels at the End of ATR Operating Cycle 138B," J.K Hartwell et...al., May 2007, Idaho National Laboratory, INL/EXT-07-12455. On page 11, the report states "At the conclusion of the ATR operating cycle 138B the activity of released I-135 for each [of the six] test fuel capsule was determined to be less than 0.2 micro-curies." For the six capsules the release = 1.2 micro-curies or 1,200,000 pico-curies. Over the total 30 week program (through 6/09) the estimated I-135 release is 2,327,400 pico-curies.

<sup>4</sup> Environmental Protection Agency Radiation Protection Standards for the Environment (40 CFR-61.92) states: "Emissions or radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr."

In a related document also previously reported here, an internal ATR report, DOE’s analysis states the following radiation releases; “Condition 1 (**Normal operation**) – Radiation exposure of: 1.00 mSv/year [100 mrem/yr or 10 times over regulatory limits] effective dose equivalent (EDE) and 0.10 mSv/year [10 mrem] EDE from airborne release to off-site public and 0.05 Sv/year [5,000 mrem] total effective dose equivalent (TEDE) to workers. Reactor fuel source term protection limit: The integrity of the reactor fuel cladding is NOT challenged except for limited clad defects.”

“Condition 4 [**fuel failure as described above in detail**] – Radiation exposure of: 0.25 Sv [25,000 mrem or 2,500 times over regulatory limits] whole body and 3.00 Sv [300,000 mrem or 30,000 over regulatory limit] thyroid dose to off-site public and evacuating workers (excluding personnel considered directly at the location of the accident). Reactor fuel source term limit: The reactor primary coolant pressure boundary must be maintained (unless this failure is the initiator) and the reactor confinement must not be damaged. The predominant risk associated with the ATR is the radiological source term [release to the environment] contained within the reactor fuel.”<sup>5</sup>

**The public can be justifiably outraged that the ATR is exempt from radioactive emission compliance required of commercial nuclear power reactors when clearly the ATR releases shown below are in violation of EPA regulatory standards; however, even DOE’s Order (5400.5) that limit radiation emissions to 100 mrem whole body to the public is also violated.**<sup>9</sup>

**ATR Experimental Fuel Failure Releases<sup>10</sup>**

<b>ATR Operating Condition</b>	<b>Total/Yr Radiation Exposure</b>	<b>EPA /Yr. Regulatory Limit<sup>6</sup></b>	<b>Air Release Off-Site<sup>7</sup></b>	<b>Number of Times Over Regulatory Limit</b>	<b>Worker Exposure / Yr.</b>	<b>DOE/Yr. Regulatory Limit to Public<sup>8</sup></b>
<b>Condition 1 Normal</b>	100 mRem	10 mRem	10 mRem	4 Times	5,000 mRem	100 mRem
<b>Condition 2 Anticipated Failures</b>	N/A	10 mRem	500 mRem	50 Times	5,000 mRem	100 mRem
<b>Condition 3 Fuel Failures</b>	N/A	10 mRem Whole Body	750,000 mRem Thyroid	75,000 times Thyroid	N/A	100 mRem
<b>Condition 4 Fuel Failures</b>	N/A	10 mRem Whole Body	300,000 mRem Thyroid	30,000 Times Thyroid	N/A	100 mRem

<sup>5</sup> “Safety Assurance for Irradiating Experiments in the Advanced Test Reactor,” T.A.Tombererlin, et.al. Idaho National Laboratory, 11/14/04, INEEL/CON-04-02244. Severt (Sv) is the international unit of radiation exposure (one Severt = 100 rem); Rem is a unit of radiation exposure used in the US. 1.0 mSv = 100 mrem.

<sup>6</sup> Current 2009 Environmental Protection Agency Radiation Protection Standards for the Environment (40 CFR-61.92) states: “Emissions or radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.”

<sup>7</sup> The cited DOE reports define “Air Release Off-site” as beyond the INL site boundary. This definition fails to acknowledge that 3 state highways transect the southern section of the INL within sight of the ATR. Therefore the exposure to the public must be changed to include these public travelers in “Total Releases.” DOE’s 2004 Emergency Management Hazards Assessment for Reactor Technology Complex that includes the Advanced Test Reactor shows a 3 km high impact zone that includes these highways.

<sup>8</sup> DOE Order 5400.5; Radiation Protection of the Public and the Environment (pg. I I-3). “DOSE LIMIT SELECTION. The DOE primary standard of 100 mrem (1 mSv) effective dose equivalent to members of the public in a year is lower than the previous primary limit of 500 mrem (5 mSv). The lower value was selected in recognition of the ICRP recommendation to limit the long-term average effective dose equivalent to 100 mrem (1 mSv) per year, or less. Experience suggests that the lower dose is readily achievable for normal operations of DOE facilities. A higher dose limit, not to exceed the 500-mrem effective dose equivalent recommended by ICRP as an occasional annual limit, may be authorized for a limited period if it is justified by unusual operating conditions.”

<sup>9</sup> Tragically, thanks to Congress, the EPA and the State of Idaho has no jurisdiction over the ATR. DOE Radiation Protection of the Public and the Environment; Order 5400.5 (1/7/93) however is violated.

<sup>10</sup> See Foot Note No. 3

Although apparently technically accurate, DOE consistently uses units of radiation exposure that makes the data in their reports appear innocuous. EDI offers a translation of the data into radiation units used in federal/state regulations. As DOE's own data shows above, the ATR is apparently in violation of regulatory limits – just for this single of numerous concurrent and ongoing ATR experimental fuel programs.

Tragically, the above discussion of test fuel failure is more normal as opposed to abnormal, based on many DOE internal documents acknowledging fuel failure.<sup>11</sup> DOE steadfastly refuses to release current ATR radiation data.

DOE's own previous Environmental Impact Statement states: the ATR released 1,802 curies in 2000 and 1,180 curies in 2003 to the atmosphere.<sup>12</sup> On average that is about 1,491 curies/year; so over an eight year period 2000 through 2008 (given ATR's continuous operation) about 11,928 curies may have been released to the air. These high emissions from ATR suggest liquid waste is first sent to the ATR cooling towers w/o treatment and the precipitates are then pumped to INTEC evaporators or the percolation ponds. This represents a significant hazard to INL workers and the downwind public.

By any standards, these are significant releases that have a major health impact on the downwind uninformed public! **None of the ATR missions are so crucial to the national interest that it justifies the enormous risk to the public during "normal" operations and/or in the event that this antiquated reactor has a meltdown via system failure and/or an earthquake initiating cascading reactor system failures.**

## Karl Grossman of Envirovideo on Nuclear Energy

Investigative reporter for Envirovideo Karl Grossman reports that nuclear energy is not the solution the nuclear lobby has been promoting. *Published on Friday, September 18, 2009 by GritTv.org*

The major safety issues Karl Grossman discusses in this video – namely, the Nuclear Regulatory Commission's intent to extend the operating life of US commercial nuclear power reactors for an additional 40 or 80 years, represents a significant public hazard. Additionally, a parallel Department of Energy (DOE) program called "Life Extension Program" (LEP) also is extending old antiquated nuclear reactors long past their initial design life. Specifically, DOE has an ongoing LEP program for the Advanced Test Reactor (ATR) at the Idaho National Laboratory.

The Advanced Test Reactor (ATR) was designed in the 1950s and went onto operation in 1969 at the Idaho National Laboratory (INL) using regulatory standards effective at the time with a life design of 20 yrs (1989). DOE intends to continue operating this antiquated nuclear reactor to 2040 regardless of significant "aging" of critical reactor components.<sup>13</sup>

DOE won a legal challenge launched by the Environmental Defense Institute, Keep Yellowstone Nuclear Free et. al. request that the DOE conduct an Environmental Impact Statement (EIS) on the health and safety issues on the continued operation of the ATR. DOE successfully delayed releasing crucial ATR documents requested under the Freedom of Information Act until after the Court ruled on our EIS suit. Consequently, EDI and the public are only now finding out about the ATR safety problems that could have made our case in the EIS suit.

Below is a video documentary that shows the impact of a reactor meltdown that should give the public insight on the health and safety impact in the event of an ATR meltdown.

### Three Mile Island Revisited

"*Three Mile Island Revisited*" video documentary challenges the claims of the nuclear industry and government that "no one died" as a result of the core meltdown at the Three Mile Island nuclear facility in Pennsylvania. It utilizes the testimony of area residents and scientific findings to reveal that deaths, especially from cancer and birth defects in children, have been widespread since the 1979 accident. Indeed, it notes that Three Mile Island's owner has been quietly settling numerous damage cases brought by persons seriously impacted by the accident. Go directly to:

<http://www.envirovideo.com>; <http://www.commondreams.org/video/2009/09/18>

<sup>11</sup> Occurrence Report, After 2003 Redesign, ATR N-16 System Degradation Results in Manual Reactor Shutdown, NE-ID-BEA-ATR-2008-0001, 1/9/08

<sup>12</sup> DOE/EIS-0287 pg. 4-30; DOE/DEIS-0373D, pg 3-26.

<sup>13</sup> Potential Inadequacy in the ATR Safety Analysis, RTC-USQ-2006-578

## "All hope abandon ye who enter here": The Unofficial Motto of the Office of Workers' Compensation Programs

Steve Oppermann reports 10/4/09 in Fed Smith.com; "I must confess that the above quote isn't really engraved over the entrances to all of the OWCP district offices – poetry buffs will realize that I borrowed this quote from Dante Alighieri, the great 14th century Italian poet who penned the "Divine Comedy" – but from my experience I think it would be a suitable warning to injured Federal workers as to how they are likely to be treated by the agency.

The articles I write for FedSmith.com are typically based on a combination of personal experience and research. This one, however, is based almost entirely on my personal experience as the representative of an injured Federal worker (my wife, Lynda); a human resources (HR) advisor who talked with a number of injured workers during my career; and a short-term consultant to the management team at Rocky Flats Nuclear Weapons Plant, where nuclear workers who became ill as a result of performing essential national security functions have been treated in a way that I believe borders on criminal. Based on that experience, I will make no pretense of being objective when it comes to OWCP.

The plight of sick nuclear workers first made headlines after national media reported the astonishing statistic that the Department of Energy, the parent agency, had run up a \$90 million administrative bill in four years but had compensated only 32 people. Congress was so incensed that it turned the whole program over to the U.S. Department of Labor (DOL) in 2004, with explicit instructions to make the compensation "timely, uniform and adequate."

OWCP even set up a separate organization, the Division of Energy Employees Occupational Illness Compensation (DEEOIC), to handle these cases. However, the late, lamented *Rocky Mountain News* reported in a July 2008 article by Laura Frank that sick nuclear workers protested bitterly about the program's failure to meet their needs, noting that Congressional hearings in 2006 uncovered White House attempts to cut costs by denying compensation to more workers. The *Rocky Mountain News* went on to observe that Congress was reassured when DOL officials repeatedly testified that the cost reduction plans had been jettisoned, and that they were compensating many more people than officials originally thought would even apply.

But the newspaper's investigation found that the department had delayed the cases of sick nuclear weapons workers or their survivors across the nation by giving misleading information, withholding records essential to their cases, failing to inform them of alternative paths to aid, repeatedly claiming to have lost evidence sent by ill workers and making requirements for compensation impossibly high.

According to Ms. Frank's article, the *Rocky Mountain News*' investigation showed that "The labor department delayed awards to some claimants until they died. "One in 17 sick workers or survivors with valid claims - more than 1,200 people nationwide - died before they received their benefits. Even some of the claims that by law should be compensated automatically are being inexplicably delayed or denied. "Millions of dollars have been spent redoing technical work that was faulty, while top labor department officials directing the program have collected tens of thousands of dollars each in bonus money. Officials refused to explain why the bonuses have been paid. Meanwhile, two out of every three claims sent for scientific analysis - at the National Institute for Occupational Safety and Health - have had to be re-examined or redone. "Program officials ignored the law and their own rules. They changed rules midstream so claimants who had been told they would receive compensation were instead denied."

I was so appalled by what I had read, seen and heard that I attended a public hearing held by DOL. Even though I barely knew any of the Rocky Flats employees, I had heard so many good things about their work ethic and professionalism from the management team that I submitted written testimony in support of getting the injured workers paid immediately and fairly.

In my opinion, the top officials of this DOL program, and those at the White House who spurred them on, should have been fired, held in contempt of Congress, and quite possibly brought up on criminal charges. Against the backdrop of incompetence and dishonesty uncovered by the *Rocky Mountain News*, we probably should not have been surprised when, last February, my wife received, in response to her usual end-of-year written request for reimbursement of medical travel and prescription drugs, two form letters from OWCP with notations declining reimbursement because her case file had been closed due to 'inactivity' in 2007 and 2008."

*The above are only excerpts; for the complete article and more information go to;*  
<http://www.fedsmith.com/article/2137/all-hope-abandon-ye-who-enter->