

36

COMMENTS FOR THE RECORD CONCERNING THE FOLLOWING REPORTS:
(At the following Agencies)

1. ~~RSPA-99-6283 (IM-230)~~
DOT Research and Special Programs Administration
Hazardous Material Regulations: Compatibility with the
Regulations of the International Atomic Energy Agency,
DOCKETS UNIT,
US Department of Transportation
Room PL 401,
400 Seventh St., S.W.
Washington, DC 20590-0001

2. Nuclear Regulatory Commission
10 CFR Part 71, Compatibility with IAEA
Transportation Safety Standards (TS-R-1) and
Other Transportation Safety Amendments,
~~SECRETARY~~, US Nuclear Regulatory Commission,
Washington, DC 20555-0001
Attn: RULEMAKING AND ADJUDICATIONS STAFF

3. Draft Environmental Assessment of Major
Revision of 10 CFR Part 71, Proposed Rule
Draft Report for Comment,
DRAFT NUREG/CR-6711
Rulemaking and Adjudications Staff
Office of the Secretary,
US NRC, Washington, DC 20555-0001

4. Draft Regulatory Analysis of Major
Revision of 10 CFR Part 71
Proposed Rules,
Draft Report for Comment,
DRAFT NUREG/CR-6713
Rulemaking and Adjudications Staff
Office of the Secretary,
US NRC, Washington, DC 20555-0001

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DOCKET NUMBER
PROPOSED RULE 71
(67FR21390)

DOCKETED
USNRC

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Due to the fact that everyone has been such busy, busy little bees, trying to produce a set of regulations that will meet with the approval of the Atomic Cult at the International Atomic Energy Agency, in their quest to pave the planet with all things radioactive that the nuclear fuel cycle can produce - I'm saving everyone time (myself included) by rolling my comments into one paper as there are so many overlapping areas between all documents for comment listed above. That way, one does not have to read four sets of documents. If something does not apply to the document the recipient of this comment has prepared, just go to the sections that do apply. Along the way everyone involved will learn that the IAEA needs the overhaul too. For a start, it is anti-Democratic. How bloody dare they decide to just go ahead and say that below a certain activity level everyone should just say its not radioactive? That is not science, or common sense, that's lunacy. Lunacy in the service of greed. NO EXEMPTIONS REPEAT, NO EXEMPTIONS. How anyone would trust the IAEA anyway is beyond me. These clowns - specifically Director General Elix of Sweden, Deputy Director General Konstantinow of the then USSR and Assistant Deputy Director General and Director of Nuclear Safety Rosen of the USA - at Kiev and then in Moscow after the Chernobyl accident, held a press conference at a time TV warned Kiev residents not to drink milk or eat lettuce, children were to be kept indoors, buildings were being hosed down, and preparations

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were being made (very late in the piece to be sure) to evacuate all school children and pregnant women. At the IAEA press conference, according to the report in Moscow Radio May 9th, 1986, cited by Haynes and Bojoun in their outstanding book "The Chernobyl Disaster", IAEA's Hlix said - among other things - "We were in Kiev yesterday, and life seemed to us to be quite usual and normal. There were many people on the streets. In Kiev they were preparing for a bicycle race. We were shown a monument dedicated to the Second World War. We saw many tourists there. In other words, what we saw proves that life is quite normal."

Hlix passed questions about radioactive exposure on to Rosen, and Rosen had nothing to say except that "we have been told that medical examinations of the inhabitants of Kiev, including children, have indicated nothing to suggest any significant detriment to health", according to Haynes and Bojoun citing the same Moscow Radio report. Kiev's city boundaries enclosed 800 square kilometers and that area got 20,000 Curies dumped on it and the radiiodines almost as high as the Windscale/Sellafield release. Later, farm directors were ordered to rotate their employees working in contaminated fields across the oblasts of Kiev, Chernihiv and Zhytomyr toward the officially designated contaminated zone. Food and milk was contaminated across a vast area, but the IAEA in its report said nothing about contaminated food intercepted at farms, in storage or at processing plants - some of the milk containing Iodine-131 was turned into cheese to be held until the Soviet Government felt the I-131 had decayed sufficiently. The IAEA has a written mandate to push all things nuclear, the IAEA for example is to: "encourage and assist research on, and development and practical application of atomic energy, make provisions... for the materials, services, equipment and facilities to meet the needs of research on, and development and practical application of atomic energy;..." (IAEA annual report) It is an autonomous organization. This is the outfit which blathered about the "high incidence of psychological disorders, which could not, however be related to radiation exposure..." when discussing the consequences of Chernobyl in their 1997 Report, when in fact due to various studies and observations, "radiation has been shown to induce functional and behavioral effects too, including motor defects, emotionality, impairment of nervous reflexes and hyperactivity and deficits in learning" in animals like monkeys (Biological Effects of Ionizing Radiations V, National Research Council National Academy of Sciences) as well as brain tumors and a host of other things, plus it causes serious effects to the central nervous system - how could it not? To quote the Co-discoverer of the fissionability of Uranium-233, the holder of two Patents on two processes for separating plutonium from the uranium and fission products of irradiated (spent) nuclear fuel, the nuclear chemist AND medical doctor, the person who established the Biomedical Research Division at the Atomic Energy Commission's Livermore National Laboratory, (at the AEC's request), and served as its first director, the Professor Emeritus of Molecular and Cell Biology - namely Dr. John W. Gofman: "in general, ionizing radiation affects living organisms in a destructive manner. It causes, as it goes through the cells of living organisms, the ripping away of electrons from the molecules or atoms in which they are present and thus altering those atoms and molecules to some other form. In addition to ripping away electrons from atoms and molecules, it can often displace electrons from one energy state in the molecule to another. All of these have the effect of altering the naturally occurring substances in a biological organism." (Court Testimony, 1978) And further: In answer to questions by the Court concerning exposure, the question was: What standards in your view, would not permit people to die with regard to releases from the Nuclear Fuel Cycle? Gofman replied: ZERO release. Question: Zero radiation, and that is the only standard..... Dr. Gofman replies: That would keep people from dying, yes, sir. The fact of the matter is, that spent fuel transport etc. releases radiation as does every other aspect of the nuclear fuel cycle. Over 50 years ago the great radiologist, R.M. Sievert (after whom the measurement SI is named) pointed out that 'there is no known tolerance level for radiation' (See Bertell: "No Immediate Danger") A tolerance level being a level below which there is no damage - sometimes called a threshold. Goodness, the International Atomic Energy Agency is so useless that

an entire enrichment plant was smuggled into Pakistan from West Germany between 1977 and 1980 and that occurred (to quote Dr. Carl Sagan/Dr. Richard Turco in "A Path Where No Man Thought") "under the "safeguards" imposed by the Vienna-based International Atomic Energy Agency." (A West German court convicted Albrecht Migule of the deed and he was fined \$10,000 and given a six month suspended sentence, according to Sagan and Turco.) Has the IAEA in its relentless quest to help nuclearize the globe ever considered the staggering effects resulting from the nuclear fuel cycle? The huge amounts of coal and gas fired electricity production to run everything from gaseous diffusion/enrichment plants like Paducah's, or to run the US Dept. of Energy's 300 square mile nuclear nightmare the Savannah River Nuclear Site? The staggering quantities of toxic chemicals involved in processing/reprocessing nuclear fuel/irradiated "spent" fuel - I guess they just love all those chlorides, the tri-butyl phosphate, hydrazines etc - and the yummy mercury and those acids. Trust the IAEA and its recommendations should we? Unless those recommendations massively increase protection to the environment and the public and the workers, the answer is: Hell NO! Not in this lifetime.

There should be MASSIVE security related changes in the proposed Rules due to the potential for terrorism - an issue I have repeatedly raised for years prior to the Sept. 11th catastrophe - the changes should be incorporated NOW. The fact of the matter is, as I wrote to General Shelton when he was Head of the Joint Chiefs of Staff, weapons exist that can go through an overpack and a cask inside it will also be blasted open, such as a Milan anti-tank weapon. Transport Vehicles for the huge casks should have side rails added a foot higher than the cask, which are solid, coated on the side towards the public with fire-retardant (and bullet-proof material perhaps against smaller arms) so that if attacked, the detonation begins exterior to the cask as much as possible. The fire-retardant is because the radioactive depleted uranium tipped armour-piercing weaponry is also pyrophoric, the radioactive DU "dust" ignites in air often. (Yes, the Gulf War Veterans breathed it all in, hence the radiation sickness). All shipments should be on dedicated trucks or trains or other vehicles/conveyances, all drivers - including those transporting small physical sized packages - from commercial or government sectors, MUST be trained in the hazards of radiation exposure and in security measures and should always travel in the company of another in the cab, plus an escort front and back to keep other vehicles away bearing "Keep back, Radioactive Material Transport" signs, plus all vehicles should have such placards (or stencilling of the words in indelible ink which must be touched up every few months for packages hard to placard) as should all other conveyances with radioactive materials on board. A n issue that must be changed, is that every agency can no longer LIE. IT IS A LIE TO DEFINE RADIOACTIVE MATERIAL ONLY AS ANY MATERIAL HAVING A SPECIFIC ACTIVITY GREATER THAN 0.002 microCuries (70 Bq) per gram, (or 2000 picoCuries per gram, according to the NRC). If one looks at other sources it works out to 2700 picoCuries per gram (Which one is it ???) but in any event one must look at what that becomes when multiplied by different factors. If one Kg (1000 grams) all of a sudden you are looking at 70,000 Bq, if it's one thousand Kilos, suddenly its 70,000,000 Bq per load. This is an outrageous situation and it is unacceptable. There is no such thing as a trivial amount of radioactivity, it all adds up and the cumulative effects can be devastating.

Among the most serious effects of radiation exposure are DNA damage, to quote UNSCEAR 1993: "It is highly unlikely that a dose threshold exists for the initial molecular damage to DNA, because a single track from any ionizing radiation has a finite probability of producing a sizeable cluster of atomic damage directly in, or near the DNA. Only if the resulting molecular damage, plus any associated damage from the same track, were always repaired with total efficiency could there be any possibility of a dose threshold for consequent cellular effects....biological effects are believed to arise predominantly from residual DNA changes that originate from radiation damage to chromosomal DNA. It is the repair response of the cell that determines its fate. The majority of damage is repaired, but it is the remaining unrepaired or misrepaired damage that is then considered responsible for cell

killing, chromosomal aberrations, mutations, transformations and cancerous changes." And further - this time from Gofman (both the above UNSCEAR quote and what follows are from Gofman: "Radiation from Medical Procedures in the Pathogenesis of Cancer and Ischemic Heart Disease" - and by the way, whatever the source of ionizing radiation, the damage occurs) who states: "The radiation dose from X-rays, gamma rays and beta particles is delivered by high speed electrons travelling through human cells and creating primary ionization tracks. Whenever there is ANY radiation dose, it means that some cells and cell-nuclei are being traversed by electron tracks. There are roughly 675 million typical cells in 1 cubic centimeter."

What I am getting at is this: not only have we known for decades that no matter how hard the nuclear maniacs try to pretend there are few or no effects, the effects are real and last for generations and there is no dose below which there is no damage - but unbelievable Curie quantities total from all sources, are to be transported over the next years one way or the other, and they all give off ionizing radiation. The casks/packages for irradiated "spent" nuclear fuel stream all types of radiation, particularly gamma and some neutron. Doses allowed are also for during transport with overpack for some casks (perhaps many) AVERAGE surface dose rates allowed by NRC in real life are 40 mrem an hour neutron + gamma on the side and 16 mrem an hour of same at inlet and outlet vent ducts (Yes, they give off radioactive decay heat ladies and gentlemen that is WAY ABOVE what the public thinks - and an outrage) and the NRC gives anyone who does a little grovelling, an exemption, and if NRC is grovelling before the nuclear industry at the same time, (usually the case) to placate those wags of greed so they don't go running to a gullible, nuclear illiterate Congress to get even worse than what they want from NRC, the results are awful. On one cask system, one of the Holtec types, one that is shorter and for use at facilities where the original design genius* of the plant didn't make the doors big enough for clearance into out of the fuel handling area/building, and the changes made allow 50 mrem/hour at the sides and 45 mrem an hour at the inlet/outlet ducts. For years the public thought the casks gave off 10 mrem an hour which was bad enough, but against the aforementioned it's a nightmare. Add to that the fact that DOT for some bizarre reason allows the contamination on a cask at the start to reach a staggering level by the time it reaches its destination - which should be changed to require decontamination stops en route - and the situation worsens. Then throw in that they finally found out in Europe that for years shipments often had a removable (?) level of contamination on spent fuel packages and rail cars of up to an exceedance of IAEA regulatory limits by as much as a factor of 1000. After estimating the occupational and public doses according to the NRC Proposed Rule, the European transport authorities concluded that these incidents did not have any radiological consequence. In other words, the bastards lied. As I speak three languages, I read some of the news reports and many scientists and doctors were very angry at the position taken by officials. From what NRC writes, the European officials believed the contamination was caused by contact of the spent fuel package with contaminated water from the spent fuel storage pool. Now if that is the case that they said that, they obviously wouldn't know the truth if it fell from Heaven engraved on a tablet, - it is a requirement that after everything is hauled out of the spent fuel pool, it must be decontaminated. There is no way that the same mistake could have been repeatedly made all over Europe for years. All of this leads to the fact that gamma radiation - and neutron - is even more penetrating than X-rays, and due in particular to the outstanding work of the greatest epidemiologist of the last century, Dr. Alice Stewart, we know the ghastly effects on children exposed in the womb to radiation is a major cause of childhood cancers and leukemia, and due to other studies we know of the terrible vulnerability of the developing embryo and fetus to radiation. Any pregnant woman who is near any transport or package giving off radiation, whether the woman is a postal worker, a passerby or whatever, or a radiation worker (The Devil only knows why any women of childbearing age are allowed to work around any radiation source, it should be forbidden, totally)

any woman who could be pregnant, will be exposed and, to quote Dr. Alice Stewart: "When you're the shape and size of a tadpole, you're going to be especially vulnerable to mutagenic hits. If a hit occurs in a tissue that's going to form an essential component of the body such as the lungs or intestine, you won't survive. This is why children do not get cancers in these organs - these children don't get born." She goes on to discuss how childhood - as apposed to adult - types of cancers come about. She also discusses the fact that if it is a germ cell that's been damaged - a cell in the ovaries or testes - and that germ cell later forms a child, the child will suffer from an inherited abnormality, or it may skip a few generations before showing up, quote: "Once you've fed defective seeds into the gene pool, they lurk as potential trouble for the future." (From "The Woman Who Knew Too Much - Dr. Alice Stewart and the secrets of radiation," by Gayle Greene. Read it and weep.) Against all this backdrop, it is and would be criminal to expose anyone to any additional radiation dose, or to declare that there should be exemptions of any type, or to allow averaging, or to maintain there is such a thing as a "negligible risk", or to bring in a regurgitated version of NRC's infamous BRC (Below Regulatory Concern) and ERROR (same thing, new name) rules they tried to pass against massive opposition - and it appears this is another attempt to exempt pages of contaminants by saying they don't warrant regulatory control. This is wrong, a moral and scientific disgrace. It says the IAEA used a BASIC SAFETY STANDARD - or BSS (more like BS) - in accordance with Radiation Protection-65 ... below which reporting is not required in the European Directive. That is followed by a total nightmare which includes them saying they evaluate "exposure to the public as a result of disposal in a public landfill". Where are the details of that gem? For one thing, a city can have hundreds of users of radioactive materials, which can already dump certain quantities in local landfills because of the idiots who came up with allowing it, so they are already leaching to groundwater and releasing to air - add the new except proposals and millions of Curies could wind up being dumped over time in the local landfill. According to the EPA, by the mid 1990's US communities and industries disposed of waste in some 93,000 landfills nationwide and quote: "The great majority of these landfills are current or potential sources of groundwater contamination." Millions of people in suburban and rural areas rely on groundwater nationwide. Of the States, AK, CA, NV, AZ, UT, WY, ND, KS, TX, AR, LA, TN, AL, IN, OH, WV, NC, DE, NJ, VA, NH AND ME get 60% to 74% of their drinking water from groundwater. The States with lowest groundwater requirements still get between 25% and 49% of their water from groundwater, included in those are Maryland, Virginia Pennsylvania and New York, Georgia, South Carolina and others. Some States get 75% to 100% of their water from groundwater, like New Mexico and Florida. Much groundwater is already contaminated, not only from chemical contaminants, pesticides, herbicides etc, but also radioactive contamination thanks to Dept. of Energy weapons/lab sites (e.g. The Savannah River Nuclear Site) or commercial sites. Dumping to landfills would massively increase the existing problems, as all landfills eventually leak and their contaminated groundwater plumes travel for miles endangering countless people even more. Many landfills are located so that surface runoff goes into area streams as it is. No one wants any additional exposure, yet it says they may transport up to 200 Bq/gram of Strontium-90, combined with its decay product of Y-90 before becoming subject to the regulations. No! Strontium-90 migrates to bone and during pregnancy is transferred to the baby's teeth and bones. Y-90 is an extremely powerful hormone disrupter. And what is all that about a 5 rem dose to the skin. Are they nuts? (Yes). No exemptions, no exceptions.

Concerning various other issues: If one does not know what the activity is in something, it should not be shipped. Regarding all the A1 and A2 values and many other issues, it pre-supposes that people can read at some level. Wrong. Ask groups like "Literacy Action". The Curie/mrem etc. old units need to be kept as well as that is about the only thing that people who may have to respond to events, (and many others) understand to some extent - chaos could come about in emergencies with the use of unfamiliar terms/measurements etc. All the ores should be brought under regulation because disgusting companies like Cabot who have contaminated the living daylight out of areas in Pennsylvania according to NRC documents and caused huge suffering in humans and animals alike with their ores, sludges and contaminated dirt, all of which should be regulated. Such outfits deal in huge physical quantities and

it's a classic situation of what can happen if you look at something gram by gram when a company deals in thousands of kilos. They had transport situations where there was contamination up to Canada. There are also old mining sites where what was mined left behind hundreds of millions of tons of radioactive tailings that give off radon gas which need cleaning up/stabilizing etc. Naturally occurring radioactive materials even if not intended to be processed for their radioactive components (like all that slag and sludge companies want to offload on China or Taiwan according to import/export applications for example) MUST be regulated with no exemptions.

It is stated that IAEA adopted values based on recommendations by the International Commission on Radiological Protection. All sorts of agencies and groups base their recommendations on the closed Club of good Ol' boys who operate under no oversight by the public/independent scientific groups etc. The ICRP is the group, who, according to reports does not consider direct experience with victims of Hiroshima or Chernobyl or other contaminated victims as necessary. The ICRP are the criminals who years ago set the allowable doses to sperm and ovum even though they knew of genetic damage. According to Dr. Bertell in "No Immediate Danger" British NRPB Member and member of the ICRP, Dr. R. Mole, stated: "The most important consideration is the generally accepted value judgement that early embryonic losses are of little personal or social concern." There must be millions of women worldwide who, under guarantees of immunity from prosecution, would subject that odious person to their own form of judgement for such coldhearted, cruel, lying words. But that's the ICRP. Where was the ICRP during all the nuclear bomb testing raining contaminants worldwide? Protesting in front of government buildings and the press worldwide perhaps? Not bloody likely, too busy pimping for the nuclear industry stating in 1965 that the level they were allowing at that time "provides reasonable latitude for the expansion of atomic energy programs in the foreseeable future." Almost every agency - and many others around the world - rely on things ICRP says as well as the truly awful Atomic Bomb Casualty Commission / Radiation Effects Research Foundation Hiroshima studies and data, founded on lousy science. First they wait five years after dropping THE BOMB during which time thousands die, children are born and don't live or are deformed, or people don't conceive at all, illness and shock and unavailing grief numbs survivors who were far enough away to survive and had pretty good immune systems to start with, but now are compromised. Into their shattered lives comes a bunch of foreigners who declare them to be a representative population, a normal population. This was of course garbage, they were psychologically damaged from trauma and physically damaged at some level due to their exposure. The people interviewing whoever could be found (and many just did not participate) were mainly the nuclear physicists, health physicists, radiobiologists not doctors of medicine trained in evaluating human health. Dr. Stewart has stated that people were reluctant to talk about personal problems with these researchers, women in particular, and Japanese midwives who acted as links between subjects and the ABCC held back reports of stillbirths, malformations etc. not wanting to socially stigmatize Japanese families and bring more of the ABCC attention. Ask yourselves who read this, how willing would you be to share anything with a bunch of foreigners who obliterated thousand of civilians, non-combatants, friends and family and your entire hometown, and the reason you survived was mainly based on where you happened to be at the time? You'd tell them to go to hell. Or you wouldn't really co-operate. I've known survivors. I agree with Dr. Stewart. So when everyone is doing their little calculations concerning the most terrible radioactive poisons, remember that the effects were far, far worse and the data is a mess. Furthermore, the Atomic Bomb Casualty Commission was funded entirely by the Atomic Energy Commission - which later became ERDA/Department of Energy and the Nuclear Regulatory Commission after a disgusted Congress split it up. Even the origin of the word "dose" seems to have been forgotten! Radiation absorbed dose. Once it's absorbed you're damaged. One rad creates roughly one billion ionizations per cubic centimeter - or about one gram of tissue (IEER). The bottom line is: there is always damage and NONE of it is acceptable. How MO-99 got a 20 Curie exception to begin with is incomprehensible. Molybdenum affects the eyes, respiratory system, blood, and can cause liver and kidney damage - toss in that it's radioactive and it's dangerous and should be controlled.

Just because a major manufacturer and user of californium-252 comes whining about costs related to lowering exposure etc. doesn't mean they too should get an exception. For one thing they could shove an overpack around the existing packs they use to reduce exposure. They also don't understand radioactivity based on what is said - it doesn't matter WHAT is done to something radioactive, you could boil it in oil or set fire to it, or dump it in water and it is still going to give off radiation through many half-lives. It's got a 2.6 year half-life, so that means it has a full radioactive hazardous life for about 26 to 52 years. Drop one of those sources out of its pocket into a river at the bottom of a gorge, and you've got a long wait before it stops contaminating water and fish.

All packages should be double packed/ have overpacks, not just "strong tight", but actual shielding material - "strong-tight" doesn't shield diddly. No matter how big or small. There should be absolutely no removal of double packs for Plutonium regardless. There should be absolutely no exceptions or exemptions regarding fissile material. I also could not believe that some bozo must have given uranyl nitrate an exemption. That stuff is unbelievable in its health effects and environmental effects. It should be highly regulated. Depleted uranium should also be far more regulated. It must be heavily shielded. It is outrageous that everyone seems prepared to believe that in case of an accident it is O.K. for people to be exposed to 5 Rem, or to 50 Rem to individual organs including the skin. - It's not. Improve the shielding, and use remote control if need be to help package what needs to be shipped and provide workers with better shielding also. All packages, no matter the size must be labeled "Danger - Radioactive Material" so that workers and the public know to stay away from it. Shipping descriptions must always state it is radioactive material. That must not be removed. One also does not need to define "radioactive" - if its radioactive, that is what it is, end of story. There must be NO authorization to transport unpackaged Low Specific Activity or Surface Contaminated Objects unpackaged or unshielded. It must be forbidden to put the stuff in tank containers, freight containers and metal intermediate bulk containers. For the love of God, don't you all understand you'll contaminate those containers too? And NO WAY should ANY H-3 or C-14 or poor contaminated animal tissue be exempted. (Still doing those foul, animal-torturing studies I see. Isn't 50 years of them enough?)

No way this side of hell should ANY Uranium Hexafluoride package/cylinder/canister be allowed to be exempted from thermal test requirements - overpacks can be added using robotic type equipment to lower worker doses. Not that outfits like the notorious United States Enrichment Corp. care much about the workers by the look of it. The National Geographic Magazine July 2002 issue - not known for being liberal the good old National Geographic - has great shots taken from the air of all those rusting cylinders. We do not need to facilitate international transport of U-Hex. We do not need to be enriching or otherwise using it in any form whatsoever. We have enough weapons of mass destruction and enough decaying, decrepit, embrittled nuclear power plants spewing out their radioactive poisons to air, soil and water already. And we have enough DU containing weapons and bullets.

NO AIR TRANSPORT, NO SHIP TRANSPORT. Just because the Death Of the Earth squad - the DOE - is insane enough to have shipped spent fuel by air already doesn't mean it should be allowed. It must be banned. To ship deadly, radioactive spent fuel, or high level waste, or the MOX (Mixed Oxide fuel i.e. uranium/plutonium mix) fuel that everyone is fighting DOE and NRC over anyway to prevent the Death of the Earth squad from putting (or rather is ghastly contractors) a Mixed Oxide fuel fabrication facility at the Savannah River Nuclear Site, over an earthquake zone, unstable soils, and over the greatest water recharge area in the southeastern seaboard - to ship that stuff by air is truly nuts. Imagine an air collision. Imagine at JFK a transport crashes on landing and bursts into flames. Don't give me any of the usual calculations. Think Murphy's Law. Furthermore, NEVER allow commercial air transport, nor the use of commercial airports for any radioactive transports. It shouldn't go by air. If you all think you have a problem with ad-verse publicity concerning spent fuel and Yucca Mountain and WIPP etc. NOW,

just wait until air transport of deadly, radioactive spent fuel makes the cover of TIME magazine and the evening news worldwide.

The TS-R-1 uses a term signifying a limit to contamination - according to the Draft Environmental assessment done for NRC (which leaves a lot to be desired by the way) the usual, murderous IAEA considers them "guidance values," and once again everything only has to be kept "as low as reasonable, economic and social factors being taken into account".

It may not happen in my lifetime, but I am convinced that one day there will be trials of this entire Nuclear Mafia similar to the Nuremberg Trials, and it will include every animal torturing pseudo-scientist, every nuclear weaponeer and warhead designer, not to mention the IAEA and the Death Of the Earth squad.

There should be IMMEDIATE notification of the NRC by licensees concerning event notification requirements - not allowing them 30 to 60 days. It's called sending a Fax and also picking up the phone. An update can be sent within a week.

Vitrified high level waste absolutely SHOULD be included in provisions for a double overpack. This is due to what is in this vitrified form. If breached by explosives, or some accident, the contents could shatter to some extent (it is in molten glass) and recontainment would be hell. Double containers improves safety.

There should be absolutely no allowing the licensees and cask certificate holders to perform minor changes, tests and experiments relative to Independent Spent Fuel Storage installations (ISFSI's) or spent fuel casks without prior NRC approval.

I have read some of the ways that the cask and ISFSI situation is handled and it must be far stricter - these people do not seem to grasp that these containers are meant to contain and control the equivalent of the death of a five county area or more, depending on the situation, to the greatest extent possible. There needs to be ASME Code standards, PLUS NRC oversight. NRC must be able to jail these idiots if they don't get it right. There is no room for error on this one. CoC holders and CoC applicants must be held accountable, and so must cask manufacturers.

A full time Authorized Nuclear Inspector should be onsite at every single nuclear facility in the country. One of the reasons being, that things are constantly falling apart, cracking, etc. etc. and the way they get repaired (or are not repaired) is frequently hair-raising. Read the individual Dockets. Furthermore, the spent fuel projects office needs the extra oversight because it would help guard against corruption and cutting corners.

The deep immersion test issue is inadequate in the tests themselves. There seems to be no understanding of the fact that the water 's shielding effects should be discounted, because it won't happen because an unshielded mess of spent fuel rods in a ruptured cask in water, will result in something like this: HISSSS-BOOM-BOOM. End of story. Bubbling, boiling radioactive water, full of debris. The fact is, spent fuel should not be transported by boat, and water crossings by road or rail should all be upgraded along transport routes. It is totally untrue to say that a scenario where a severe accident takes place near or over deep water (resulting in the package in the water) is extremely unlikely and possibly beyond reasonable credibility. Don't the people who write this read? A train went into the water on the Gulf Coast in the recent past. Furthermore, the Airforce lost an atomic bomb off the coast of Georgia near Tybee Island in about 15 feet of mud and that was decades ago and everyone, including ex-CIA and Airforce people are STILL trying to locate the bloody thing. It's called the Tybee Bomb. It's near Savannah. Actually it's one of the first thermonuclear bombs. There's one off the New Jersey coast also. Maybe you all up in DC should try and get it removed. The One that hit the poor guys house in the Carolinas fortunately had no plutonium pit on board in the weapon, but it ruined his life. Nothing is "beyond reasonable credibility!"

What on earth is United States Enrichment Corporations "Good Handling Practices for Uranium Hexafluoride?" They can't even clean up the rusted containers they have. They don't know the meaning of the words. This outfit makes millions and millions of dollars. It can easily afford massive improvements and should be made to upgrade all its packaging etc. now, before there is a catastrophic accident.

There should be an inclusion of the criticality safety index in the shipping des-

9.

cription for fissile material packages. The "FISSILE" label is inadequate and should have more on it. 99.9 % of the population probably has absolutely no idea what that means. Add the radiation symbol, the words "Very dangerous, Radioactive. Keep far away from public and animals. Guard at all times."

All radioactive material must be controlled, including ores etc. containing naturally occurring radionuclides, because they are shipped in large amounts. Mill tailings, contaminated earth, concrete, rubble, other debris and activated material at low specific activity levels must be regulated and not exempted in any way. If not, that plant you buy for your mother might have been planted in contaminated soil.

Radioactive substances on the surface of a non-radioactive material, makes that material radioactive, therefore should be controlled.

Most shippers, handlers and emergency responders need extra training, personnel and equipment, and they don't understand radiation hazards. A DOT and an NRC inspector should check every fissile material package/shipping cask etc. as it comes into each state along its shipping route in the presence of the aforementioned handlers and responders. By the way, the only hospital in the world with expertise in handling severely contaminated people is in Japan. There is no way local hospitals know what to do. Once again, casks should be de-contaminated along the route to deal with cask weeping. There should be no fissile material packages whatsoever on passenger aircraft. That is an outrageous suggestion. The fact that it is already going on is even worse. It must be stopped.

The issue of economic impacts to NRC licensees or DOE or DOD contractors should never be the issue, safety should be the issue. They all got into it for massive profits, in particular where NRC licensees like utilities are involved - their top staff can take a pay cut and the owners can do a bit of belt tightening to offset costs.

Everything, from highway shipments to every type of industrial type packaging and package containing radioactive Class seven materials MUST also be marked "RADIOACTIVE, DANGER". This is so people can stay away from it.

Contamination should include the word "NEUTRON" as well. If some international shipments are made anyway of radioactive material at any level or type etc., by air, overflight approval from the government of every country it will fly over should be required.

The DOT definition of Quality Assurance is pathetic. It should include wording that specifies the use of oversight by health physicists, radiation safety officers and nuclear engineers and ASME controllers, as well as DOT and NRC inspectors, plus the use of the most up-to-date radiation detectors.

Enriched "heels" of solid uranium hexafluoride should have an overpack too.

External dose rates for Low Specific Activity and Surface Contaminated objects should not exceed ONE MILLIREM A YEAR, at 3 meters.

There should be no mixing of fissile material packages with others, nothing radioactive should be transported on the same conveyance or in the same conveyance as animals, fish, birds or members of the public. Under DOT's "Segregation Distances" exposures listed to crews is disgraceful. And likewise the exposures to passengers. For crews it's like getting about 49 chest X-rays a year.

An issue that has not been raised, is the issue of rail-bed contamination resulting from the transports repeatedly irradiating them. It has happened at Oak Ridge and at that pustule on the surface of the earth: Nuclear Fuel Services in Erwin TN who contaminated the Clinchfield railyard. Perhaps additional shielding can be added beneath the railcars.

Another issue is Surety bonds. Each licensee whose reactor produced spent fuel and is shipping it or any other high level waste or transuranic waste should post a cash amount in case of accident equivalent to what DOE calculated cleanup would cost them. For Spent fuel it ranged up to around 20 Billion if I remember correctly. The sum should be at least \$ 10 Billion. Southern Company for example would have no problem with that as they are always boasting they have that and more on TV.

Before I forget : the crush test. It should be able to withstand being run over by a freight train or a tank depending on size.

I noticed that in the Draft Regulatory Analysis they lamented severe data limitations

concerning radioactive materials shipments. Considering that the State of Nevada has been running maps, train and truck routes and estimated shipments for ages, I am amazed. NRC also has information on the absolutely staggering amount of spent fuel rods at each reactor. Ask them.

I also noticed that a big concern was how much everything would cost the licensees, the poor poverty stricken nuclear industry. Everything nuclear is a huge cash cow. It is massively tax-payer subsidized to boot. One cost that could be cut is the estimates of hourly payments that seems to be \$77 an hour and up. I see no reason why they should not be paid the same as people in the real world, for example a widowed single mother of two working in a store for good pay in the real world- say \$8 to 10 for that sort of job, per hour. That would cut costs.

The State of Nevada maintains that the DOE plans a "market driven" transportation system that will rely on regional contractors and subcontractors. Many will never have had anything to do with radioactive materials. DOT and NRC should oppose that and if it happens anyway, requirements for special year long courses should be met for all radioactive waste/spent fuel contractors and subcontractors involved in shipping and handling.

All transport routes should bypass towns, and shipments should be made only in off-peak, non-rush hour times and emergency response teams from NRC and DOE should go with every spent fuel shipment in accompanying vehicles. Rail crossings and intersections a mile ahead of and behind each spent fuel and high level waste shipment should be closed off by authorities county by county ten minutes ahead of each shipment, for security and safety reasons.

A final thought. You all are regulating the most lethal material ever. Material which affects and will continue to affect people forever due to the long lives of these deadly materials. Yet the proposed Rules etc. come across as if it's just another day at the office for you. It is all not real to you, but by God it will be real with the first accident. You must never forget that you are regulating something that should never have been created in the first place - the detrious of nuclear weapons and nuclear power. These Rules must be the strictest rules ever written - no kow-towing to industry on this one - because they must take into account the effects to the most vulnerable among us and those most seriously affected by radiation: babies, children and pregnant women. In other words, the future generations. Just this once, DOT and NRC can do the right thing and make these regulations powerful protection of people and the environment.

Pamela Blockey- O'Brien.

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1 ENCLOSURE: LETTER OF CONCERN
By DR. J. W. GOFMAN



May 11, 1999
LETTER OF CONCERN.

BERKELEY, CALIFORNIA 94720

To Whom It May Concern:

During 1942, Robert E. Connick and I led the "Plutonium Group" at the University of California, Berkeley, which managed to isolate the first milligram of plutonium from irradiated uranium. (Plutonium-239 had previously been discovered by Glenn Seaborg and Edwin McMillan.) During subsequent decades, I have studied the biological effects of ionizing radiation --- including the alpha particles emitted by the radioactive decay of plutonium.

By any reasonable standard of biomedical proof, there is no safe dose, which means that just one decaying radioactive atom can produce permanent mutation in a cell's genetic molecules. My own work showed this in 1990 for xrays, gamma rays, and beta particles (Gofman 1990: "Radiation-Induced Cancer from Low-Dose Exposure"). For alpha particles, the logic of no safe dose was confirmed experimentally in 1997 by Tom K. Hei and co-workers at Columbia University College of Physicians and Surgeons in New York (Proceedings of the National Academy of Sciences (USA) Vol.94, pp.3765-3770, April 1997, "Mutagenic Effects of a Single and an Exact Number of Alpha Particles in Mammalian Cells").

It follows from such evidence that citizens worldwide have a strong biological basis for opposing activities which produce an appreciable risk of exposing humans and others to plutonium and other radioactive pollution at any level. The fact that humans cannot escape exposure to ionizing radiation from various natural sources --- which may well account for a large share of humanity's inherited afflictions --- is no reason to let human activities INCREASE the exposure to ionizing radiation. The fact that ionizing radiation is a mutagen was first demonstrated in 1927 by Herman Joseph Muller, and subsequent evidence has shown it to be a mutagen of unique potency. Mutation is the basis not only for inherited afflictions, but also for cancer.

Very truly yours,

John W. Gofman
John W. Gofman, M.D., Ph.D.

Professor Emeritus of Molecular and Cell Biology