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To: NRC Chair Richard Meserve, U.S. Nuclear Regulatory Commission (USNRC), Washington, D.C. 20555-0001, Attention: Rulemaking and Adjudications Staff.

From: Dennis R. Nelson, 660 North Dearborn Street, Apt. 306, Chicago, Illinois 60610. Being one of the original "no nuke" and environmental activists in the country, I have a Bachelor of Science (B.S.) Degree in Biology and Environmental Studies from Dana College in Blair, Nebraska. I am the Alternative Energy Researcher with the Nuclear Energy Information Service (NEIS), a non-profit research and education group.

Concerning: THE CONTAINMENT AND ISOLATION ("NON-RELEASE") OF 'LOW-LEVEL' RADIOACTIVE WASTES (LLRWs) RATHER THAN THE INDISCRIMINATE RELEASE OF RADIOACTIVELY-CONTAMINATED MATERIALS INTO THE "SOLID WASTE (I.E., RECYCLING) STREAM." The classification of 'low-level' does NOT mean that these nuclear wastes are innocuous.① Because TRUE RECYCLING (clearly defined since the first "EARTH DAY" in 1970) offers environmental and economic benefits to our society, under no circumstances should the term "recycling" be used to describe the USNRC's proposed "disposal" of 'low-level' radioactive wastes. Quite bluntly, this is nothing but a perversion of what reaycling actually is all about. The phrase "radioactive metal recycling" is not only ecologically obscene but it is also an example of 'nukespeak.'② I prefer the term "co-mingling" as one way to describe what the USNRC is proposing to do.

TEMPLATE = SECY-067

SECY-02

As an "active listener" at the USNRC meeting held on Wednesday, December 8, 1999, at the Palmer House in Chicago's downtown "Loop" area, I oppose the proposed USNRC's rules that would make it legal to dispose of LLRWs as solid waste and scrap metal that, in turn, could then be made available for "unrestricted use" (to use the USNRC's own phrase)--ending up in kitchen utensils (such as pots and pans), household appliances (such as refrigerators), bedsprings, jewelry, medical implants, teeth braces, tin and aluminum cans, automobile components, belt buckles, clothing zippers, toys, strollers, and even steel beams, building foundations, and sidewalks. Of course, there would be NO labels (or any other warnings) for us to heed.

The focal points of "EARTH DAY (April 22), 1990," were consumer choices to save the environment by purchasing "green products" and making "green investments" (and companies to save the environment by promoting "green marketing," as long as it is legitimate and not merely "window-dressing" in the attempt to cover up polluting activities). A flurry of books and booklets along these lines were published during 1989-1992 that pointed out the benefits of recycling, what can be recycled, how recycling can be done, and the importance of buying finished products made out of recyclable materials (at least 50% "post-con-

sumer" waste). In my "environmental reference library" alone, there are a grand total of 25 of these sort of volumes (including the excellent series by the Earth Works Group in Berkeley, California).

For example, a pop or beer can made from recycled aluminum uses 90%-97% less energy than one made from bauxite, reduces air pollution by 95%, and cuts water pollution by 97%. (Each recycled aluminum can saves the energy equivalent of half a can of gasoline.) The environmental benefits gained from substituting scrap steel for iron ore are a 47%-74% reduction of energy consumption, an 85% reduction of air pollution, a 97% reduction of mining wastes, and a 40% reduction of water consumption. Using recycled paper rather than virgin wood pulp will cut energy consumption by 23%-74%, air pollution by 74%, water pollution by 35%, and water consumption by 58%. Substituting recycled glass for virgin resources will reduce energy use between 4%-32%, air pollution by 20%, mining wastes by 80%, and water use by 50%. (3)

Now with the primary theme of the approaching "EARTH DAY (April 22), 2000," being cleaner energy and global warming, large-scale recycling of aluminum, scrap steel, paper, glass, etc. is one of the practical, here-and-now steps that we

can take to "beat the heat." For every pound of solid waste that we recycle, at least one pound of carbon dioxide (CO_2) emissions -- the main "greenhouse gas" -- is reduced. Cutting down our trash by around half a big garbage bag each week will reduce CO_2 emissions by at least 1,000 pounds annually. ④

Over the past 30 years, environmental groups, local recycling centers, municipalities, and county governments have worked long and hard to make widespread garbage recycling respectable and convenient -- especially by starting curbside programs. ⑤ A "main stay" of any integrated solid waste management plan (along with waste reduction and reuse), recycling is something that we have learned to trust as an economical alternative to new incinerators ⑥ and landfills that will cut pollution, save energy and natural resources, create new employment, and bring dollars to local economies.

Because recycling is a "shining example" of sustainable economic development, the LAST THING that the USNRC should do is to allow radioactively-contaminated metals (such as aluminum, steel, and copper), besides concrete, to be nonchalantly mixed in ("co-mingled") with "ordinary materials" (making them virtually untraceable) -- and then ending up in the hands of recycling

companies, and ultimately in OUR hands in the form of consumer products that "glow in the dark" (figuratively speaking, of course). There is NO SAFE DOSE of ionizing radiation. Every dose (no matter how small) increases the risk of cancer, leukemia, congenital (birth) defects, and genetic (chromosomal) damages. The idea of a "safe dose" of ionizing radiation is merely a mythical hope of nuclear power boosters. ⑦ No wonder why these proposed USNRC rules are vigorously opposed by steel and aluminum recycling companies, scrap metal haulers, and the medical profession. THE USNRC SHOULD NOT DO ANYTHING TO UNDERMINE THE TRUST AND CONFIDENCE THAT WE HAVE IN TRUE RECYCLING.

The commercial nuclear fuel cycle is a colossal technological boondoggle -- a loser any way that you look at it. ⑧ The electricity from nuclear power was supposed to be "clean," "safe," and "too cheap to meter" -- and it has turned out to be none of these things. The management of 'low-level' n-wastes is one of nuclear power's serious "hidden costs." The USNRC's proposed rules to "co-mingle" radioactively-contaminated materials with real recyclables will shift the burden of this "hidden health and economic cost" from the "shoulders" of the nuclear industry onto the "backs" of mostly unwary consumers. Finally,

at a time when we should be looking at ways of substantially reducing all toxic pollution at the source (and keeping toxics out of the environment and our bodies), the large-scale recycling of scrap steel, aluminum, paper, glass, and other materials is the way to go. ⑨ By contrast, the USNRC's proposal that allows LLRWs to be mixed in ("co-mingled") with real recyclables is a "180-degree detour" in the wrong direction.

Thank you,
Dennis R. Nelson
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FOOTNOTES/REFERENCES

① Being among the inevitable (and unwanted) by-products of the commercial generation of electricity from nuclear power (especially the large number of licensed nuclear reactors throughout Illinois), 'low-level' radioactive wastes (LLRWs) include very radioactive nuclear powerplant parts such as the pressure vessel (which directly holds the reactor core [uranium fuel rods]); steam generators, piping, and most other reactor components. LLRWs contain the same radionuclides as

the often more-feared 'high-level' nuclear wastes (irradiated spent fuel rods), "including long-lived isotopes such as plutonium-239 (hazardous for 240,000 years) and iodine-129 (hazardous for millions of years) as well as extremely dangerous elements like cesium-137 and strontium-90. The federal Nuclear Regulatory Commission inexplicably encourages shallow land burial -- which can be less protective than required in many states for normal garbage dumps -- for this lethal material."

The "Land of Lincoln" has the dubious distinction of having more nuclear reactors than any other state. Commonwealth Edison owns and operates Braidwood Units 1 and 2 (20 miles southwest of Joliet, Illinois); Byron Units 1 and 2 (17 miles southwest of Rockford, Ill.); Dresden Units 2 and 3 (Unit 1 is closed down and decommissioned) located 9 miles east of Morris, Ill.; LaSalle Units 1 and 2 (11 miles southeast of Ottawa, Ill.); Quad Cities Units 1 and 2 (co-owned and co-operated by MidAmerican Energy) located in Rock Island County, Ill.; and Zion Units 1 and 2 (permanently shut down in January, 1998) located 40 miles north of Chicago. Amergen owns and operates Clinton Units 1 and 2 (located 6 miles east of Clinton, Ill.):

Dave DeRosa (Editor), David A. Kraft, Corey Conn, Michael Mariotte et al., A Handbook

on Nuclear Sites in the Great Lakes Region, Prepared for the Nuclear-Free Great Lakes Action Camp, Camp Soni Springs, Three Oaks, Michigan, August 13-19, 1999, pp. 10, 12-14; 18-25 (10, 22-25).

"Irradiated fuel is only part of the problem. Less intense though still dangerous 'low-level' waste represents a far larger volume. Low-level waste is often described by nuclear authorities as radioactive materials with a half-life of 30 years or less. In fact, debris classified as low-level often contains long-lived materials such as plutonium, technetium, and iodine. Technetium-99 and iodine-129, for example, are routinely found in low-level waste yet have half-lives of 210,000 and 15.8 million years, respectively. In 1989 alone, more than 76,000 cubic meters of weapons-related low-level waste and 46,000 cubic meters of civilian low-level waste were buried in shallow trenches in the United States. Of the civilian portion, most -- about 73 percent of the volume and 95 percent of the radioactivity -- came from the nuclear power industry; it included used resins, filter sludge, and discarded equipment": Nicholas Lenssen, Nuclear Waste: The Problem That Won't Go Away, Worldwatch Paper 106, Washington, D.C.: Worldwatch Institute, December, 1991, pp. 12-13.

The enormous cost of cleaning up our nuclear weapons production facilities (such as the Hanford Nuclear Reservation in Washington, the Savannah River Site in South Carolina, the West Valley Site in New York, the Oak Ridge National Laboratory in Tennessee, and the Idaho National Engineering Site) includes dealing with roughly 1,800,000 cubic meters of LLRWs. These n-wastes include contaminated equipment, construction debris, filters, and scrap metal. Most LLRWs are packaged in drums or boxes and buried in shallow pits or trenches. About 3 million cubic meters of LLRWs have been "disposed of" this way. But 'low-level' nuclear wastes continue to be created by cleaning up the nuclear weapons complex and the management of other radioactive wastes. Right now, around 80% of all newly-created n-waste is 'low-level': Linda Rothstein, "Nothing Clean About 'Cleanup,'" Bulletin of the Atomic Scientists, May/June, 1995, pp. 34-41 (39).

For more about LLRWs, please see: Ronnie D. Lipschutz, Radioactive Waste: Politics, Technology, and Risk, A Report of the Union of Concerned Scientists, Cambridge, Massachusetts: Ballinger Publishing Company, 1980.

(2) With the phrase "radioactive waste recycling" we have entered the George Orwellian "twilight zone" of 'nukespeak' -- where reprocessing is just

another type of "recycling" (pronuclear boosters really like that word -- but for the wrong reasons!), nuclear reactor accidents are classified as "incidents," nuclear station malfunctions are (mis)labeled as "occurrences," and nuclear fast-breeders are nonchalantly referred to as "renewable." [This last example of 'nukespeak' is clearly an insult to the true renewable energy technologies (such as solar photovoltaics, solar thermal-electric, passive and active solar, wind-electric turbines, modern water-pumping windmills, the bioconversion of organic wastes into liquid and gaseous biofuels, and microhydro).] For an eye-opening discussion about "nuclear language, visions, and mindset," please check out: Stephen Hilgartner, Richard C. Bell, and Rory O'Connor, Nukespeak: The Selling of Nuclear Technology in America, San Francisco, California: Sierra Club Books, 1982. Also see: Paul Loeb, Nuclear Culture: Living and Working in the World's Largest Atomic Complex, Philadelphia, Pennsylvania: New Society Publishers, 1986.

③ Jeffrey Hollender, How to Make the World a Better Place: A Guide to Doing Good, New York, N.Y.: Quill/William Morrow and Company, 1990, pp. 88-94, 96. Susan Hassol and Beth Richman, Creating a Healthy World: 101 Practical Tips for Home and Work -- Recycling, A Windstar Earth-Pulse Handbook, Snowmass, Colorado: Windstar Foundation, August, 1989, pp. 42-57. Also see: Earth-Works Group, The Recycler's Handbook: Simple

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④ Sarah L. Clark, Fight Global Warming: 29 Things You Can Do, Environmental Defense Fund (EDF), Yonkers, New York: Consumer Reports Books (Consumers Union), September, 1991, pp. 56-57, 92-93. Andrew Revkin, Global Warming: Understanding the Forecast, American Museum of Natural History and Environmental Defense Fund, New York, N.Y.: Abbeville Press, 1992, p. 171.

⑤ Brenda Platt, Christine Doherty, Anne Claire Broughton, and David Morris, Beyond 40 Percent: Record-Setting Recycling and Composting Programs, Institute for Local Self-Reliance, Washington, D.C.: Island Press, 1991.

⑥ Life-cycle cost comparisons of curbside trash recycling programs versus "mass-burn" garbage incinerators (and then the practical lessons learned from these economic comparisons) are found in: Richard A. Denison and John Ruston (Editors), Recycling and Incineration: Evaluating the Choices, Environmental Defense Fund, Washington, D.C.: Island Press, 1990, pp. 104-170. Dan Kirschner and Adam C. Stern, To Burn or Not to Burn: The Economic Advantages of Recycling Over Garbage Incineration for New York City, New York, N.Y.: Environmental Defense Fund, August, 1985. Also see: Louis Blumberg and Robert Gottlieb, War on Waste: Can

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(7) John W. Gofman, M.D., Radiation and Human Health: A Comprehensive Investigation of the Evidence Relating Low-Level Radiation to Cancer and Other Diseases, San Francisco, California: Sierra Club Books, 1981. John W. Gofman, M.D., Ph.D., Radiation-Induced Cancer from Low-Dose Exposure: An Independent Analysis, San Francisco, California: Committee for Nuclear Responsibility, 1990. John W. Gofman and Arthur R. Tamplin, Poisoned Power: The Case Against Nuclear Power Plants, Emmaus, Pennsylvania: Rodale Press, Inc., June, 1971. Also see: Fred A. Mettler, Jr., M.D., and Arthur C. Upton, M.D., Medical Effects of Ionizing Radiation, Philadelphia, Pennsylvania: W.B. Saunders Company/Harcourt Brace and Company, 1995. J.C. Nenot and J.W. Stather, The Toxicity of Plutonium, Americium, and Curium: A Report Prepared Under Contract for the Commission of the European Communities within its Research and Development Programme on "Plutonium Recycling in Light Water Reactors," Oxford, England: Pergamon Press Ltd., 1979. Harvey Wasserman and Norman Solomon, with

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(8) Irvin C. Bupp and Jean-Claude Derian, The Failed Promise of Nuclear Power: The Story of Light Water, New York, N.Y.: Basic Books, Inc./ Harper Colophon Books, 1981. Christopher Flavin, Nuclear Power: The Market Test, Worldwatch Paper 57, Washington, D.C.: Worldwatch Institute, December, 1983. Christopher Flavin, Reassessing Nuclear Power: The Fallout from Chernobyl, Worldwatch Paper 75, Washington, D.C.: Worldwatch Institute, March, 1987. Daniel F. Ford, Henry W. Kendall, Thomas C. Hollocher, James J. MacKenzie et al, The Nuclear Fuel Cycle, A Report of the Union of Concerned Scientists, Cambridge, Massachusetts: The MIT Press, 1975. Daniel F. Ford, Three Mile Island: Thirty Minutes to Meltdown, New York, N.Y.: Penguin Books, 1982. Daniel Ford, The Cult of the Atom: The Secret Papers of the Atomic Energy Commission, New York, N.Y.: A Touchstone Book/ Simon and Schuster, Inc., 1984. Peter Faulkner (Editor), The Silent Bomb: A Guide to the Nuclear Energy Controversy, New York, N.Y.: Vintage Books/ Random House, July, 1977. John W. Gofman, "Irrey": An Irreverant, Illustrated View of Nuclear Power, San Fransisco,

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(Special Note: This list is just a sample of the wealth of "No Nukes" literature published over the past 30 years about the technical and non-

technical problems posed by the commercial nuclear folly.)

⑨ John Harte, Cheryl Holdren, Richard Schneider, and Christine Shirley, Toxics A to Z: A Guide to Everyday Pollution Hazards, Berkeley, California: University of California Press, 1991, p. 168.