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Statement of Arjun Makhijani on Nuclear Dumps by the Riverside

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Nuclear Dumps by the Riverside focuses on the threats to water resources in South Carolina and Georgia arising from the Savannah River Site, a nuclear weapons plant where more than a third of U.S. weapons plutonium and almost all of the tritium was produced. It is the third in a series of water-oriented reports by the Institute for Energy and Environmental Research. A few years ago, we decided to focus on threats to water resources posed by radioactive waste dumping and mismanagement because we perceived that the Department of Energy (DOE) was gradually abandoning its responsibilities and promises to thoroughly cleanup nuclear weapons sites from the vast radioactive and toxic legacy of over half a century of nuclear weapons production. Our first report focused on the Snake River Plain aquifer in Idaho, where DOE dumped waste containing more than one metric ton of plutonium (over 200 nuclear bombs equivalent) packed in nothing more than cardboard boxes, 55-gallon drums and wooden crates, into open trenches. Our second focused on a poor approach to setting cleanup criteria for residual plutonium at Rocky Flats. There the DOE abandoned traditional, long-accepted, and scientifically sound methods and decided to ignore the potential for the use of water even far into the future in setting those criteria.

DOE actions at the Savannah River Site, which contains well over half of all the radioactivity in the entire U.S. nuclear weapons complex, are the most shocking yet. It has created two de facto high-level nuclear waste dumps by the riverside. Tanks 17 and 20 contain considerable amounts of residual high-level radioactive waste, which is the most dangerous waste from plutonium production. This residual radioactivity (so called because most of the waste in the tanks has been pumped out) had concentrations far above the maximum limits allowed for shallow land disposal of waste by either DOE's own rules or Nuclear Regulatory Commission regulations for civilian industries. But the DOE decided to dilute the waste with grout, and leave it onsite permanently. This is making a residual waste problem that could be remedied in the long-term (with development of technology) into one that will be extremely difficult or impossible to remediate. Against sound independent advice, including from the National Academy of Sciences, the DOE is assuming that it can maintain site control essentially forever. It refuses to

recognize that the half-lives of materials like plutonium-239 are so long that it is both reasonable and prudent to assume loss of site control and devise cleanup plans in that light.

The DOE plans to grout residual waste in all 51 high-level waste tanks at SRS. This approach will very likely leave a million or more curies of radioactivity in high-level waste tanks on the Savannah River Site. The residual cesium-137 in Tank 20 alone is estimated to be 48,000 curies. Before this program began, the DOE estimated that it would have 9,900 curies of cesium-137 in all 51 tanks. The DOE has mis-estimated its waste problems again. This is evidence of gross mis-estimation of the impact of the program and calls for a reassessment.

Other pollutants have already severely contaminated the water at SRS far above drinking water standards, though this highly polluted water is not used for drinking. Some of this radioactivity migrates into surface streams and into the Savannah River. Dilution has so far kept the concentrations of radioactive materials well within drinking water limits.

Tritium, a radioactive isotope of hydrogen, is the most common radioactive water pollutant at SRS. While it is well within federal safe drinking water standards, recent research indicates that tritium standards may not be adequate to protect pregnant women and developing fetuses from adverse health effects. Tritium can produce multigenerational risks. For instance, it can affect the ova that are forming in female fetuses. Hence it creates risks both for the children and (in case of girl children) for the grandchildren of pregnant women. The government should tighten tritium standards so as to protect those most at risk – pregnant women and developing fetuses.

African Americans who rely on the Savannah River as a primary source of protein – that is, subsistence fishermen – are also disproportionately affected by the consumption of fish downstream of SRS contaminated with mercury and radioactive materials. On average, African American subsistence fishermen consume about four times more fish than the maximum limit set by the South Carolina Department of Health and Environmental Control. The federal government needs to recover the buried wastes dumped decades ago if the contamination of the river is to be reduced and this environmental injustice corrected.

Pollution from SRS has crossed over into Georgia via contaminated clouds. The rain there contains tritium from SRS. Some wells in Georgia have tritium in them far above background (though also well below drinking water standards) as a result. Studies on whether tritium is also migrating under the river have been inconclusive. IEER recommends that thorough studies be done to resolve the outstanding questions. Until that is done we will not know to what extent the wastes at SRS pose threats to the deep aquifers of the region.

Throughout the country, the DOE seems set to walk away from its waste management and long-term stewardship promises and responsibilities. It is cutting off monitoring money and cutting out states from decision-making partnerships. In the study we have cited the example of the Weldon Spring waste site in Missouri. The DOE decision to cut off Georgia's monitoring money is in keeping with this direction. The DOE is at odds with other states as well.

I am going to start a tour of Georgia and South Carolina directly after this press conference because it is imperative that the people of the region understand the dimension of the risk. The DOE is creating the first ever high-level waste dumps in South Carolina. I do not want to raise alarms about the state of current contamination of the Savannah River. I am concerned about the pollution and feel it should be and can be reduced, but the levels of contamination are well within present safe drinking water limits. But I do want to raise an alarm about the drift of DOE policy at SRS and across the country into a direction of lax cleanup, waste mismanagement, and disregard of the long-term health of water resources for short term expediency. These are all hallmarks of the Cold War era, when the DOE and its predecessor agencies relegated the health of the public and the environment into second place, if that, did grave harm. It was an era that the federal government promised had ended with the Cold War. But it seems to be back.