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Nuclear Legacy: Students of Two Atomic Cities, by Maureen McQuerry

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Nuclear Legacy: Students of Two Atomic Cities. By Maureen McQuerry, Battelle Press, 2000. Pp 305. \$22.50 hardcover

Students in two cities developed for nuclear applications by the national authorities in both the United States and the Ukraine describe their personal views in individual short essays of life in their respective communities. These 13 to 16 year old students conducted their own research and their personal perspectives on their future lives and the future of nuclear power are printed in both Ukrainian and English. This book was developed through the efforts of Maureen McQuerry, a middle school teacher in Richland, Washington, and her principal assistant counterpart teachers in Slavutych, Ukraine, Tetyana Gavrysh and Inna Ryazabnova. These teachers facilitated communication between the students via email and telecommunications. The papers by individual students chronicle the history of their areas, establishment of a normal family life, local economic problems, schools, the arts, and the need to address the future of their communities with the decreased use of nuclear energy. This book is not to be read for technical content, but for the clear-eyed perspectives of these young teenagers. There is not a Luddite image of turning the clock back to a pre-nuclear era of farming or a blind faith that the national governments of both countries will provide economic alternatives to insure the survival of their communities. The short essays are astonishing in clarity of thought and absence of preconceived beliefs. The material, organized in three parts as History, The Communities Today, and The Future, is highly readable and can be put down, picked up, and read without any loss of continuity.

Kudos also go to all three teachers who guided the students, stimulated the exchange of views, facilitated communication through email and telecommunication, encouraged the research, got them to put it in writing, and served as ramrods to bring the book to fruition. Perhaps their greatest accomplishment was to serve as a catalyst for original thought by the students.

The book was published by the Battelle Memorial Institute, a major U.S. Department of Energy contractor, with a forward by a past President of the American Nuclear Society. Credit is also provided to Bechtel and the Pacific Northwest National Laboratory. Nonetheless, the writing and research on these complex issues is by the students and includes interviews with various local officials involved with the nuclear complex in both countries

The Richland teenagers researched the past history of their area, documenting the 1943 requirement for Native Americans to leave their lands for a government project to win the war. Residents of Prypyat

were forced to leave their lands by the authorities due to the imminent health threat caused by the Chernobyl reactor failure.

The main purpose of Hanford was to build and operate nuclear reactors for fissionable material for nuclear weapons and the purpose of the reactors at Chernobyl was for the generation of electricity. The day after the massive nuclear reactor accident at the Reactor Unit 4 in Chernobyl in 1986, the residents of Prypyat, where the workers lived two miles away, were given twelve hours to leave their possessions and homes in the city. The 1104 square mile exclusion area, which includes the city, remains in effect. One cannot help but wonder how we would have coped if required to do this. Later that year, the Soviet authorities built a new city, Slavutych, to house the Chernobyl workers and their families.

The economies of both cities are dependent on the work for the cleanup of radioactive materials and the students provide a clear-eyed perspective of the economic future of their communities if nuclear power does not become a major source of electricity.

The Ukrainian students address potential causes of the massive catastrophic release of radioactive materials from the Chernobyl reactor accident including failure by the reactor operators to follow required procedures, lack of training for emergencies, and inherent design flaws in the equipment. While of a totally different order of magnitude and level of risk to the populations, the cleanup of radionuclides released to the environment from the Hanford site is estimated by the U.S. Department of Energy (DOE) to cost \$22.8 billion. The American students note that the local economy and jobs are heavily tied to the cleanup of those radioactive materials but do not address underlying causes for these costs such as the authority of DOE to self-regulate the allowable release limits, failure to adopt newer safety standards including those issued by the U.S. Nuclear Regulatory Commission or managerial practices. (Note that the estimated total cost of the cleanup of radionuclides at all DOE sites in the United States was estimated by DOE to be \$212 billion.) When the cleanup work is finished, the cleanup jobs will no longer be needed.

The two cities were created by national governments for national needs. The economic problems now facing these two government towns are recognized by the children in both countries, who identify the need of diversification for economic stability. The problem is not unique to Richland and Slavutych, but is a dilemma confronting many other communities worldwide where changing technologies cause unemployment and the outsourcing of jobs leaves sectors of the economy in tatters. There is an astonishing maturity to these children in recognizing "You're on your own," and they appear to unflinchingly

recognize the inevitability of change. As adults, we need to face up to these kinds of changes such as the economic impact of the completion of WIPP on the City of Carlsbad with loss of jobs.

The students in both cities exchange views, thoughts, and ideas with each other, which is one of the most reassuring expressions of hope for the future. Different cultures, different education on the Cold War, different political beliefs, different clothes, different opportunities for travel are all transcended in a common denominator of reality and the need to not just jointly survive but to thrive as well. The approach is not just a model for future projects in middle schools, but could serve as a model for high schools and universities as well.

Their views on what the future will bring for themselves, their communities, and nuclear energy are fascinating. They state that the economic success of their communities requires a strong commitment to diversification. When asked whether the future of their communities will lie with business or the individual, many expressed a belief in business. Predictions of the future of nuclear energy elicited the following from Kalin Sloughter, Richland: "The future of nuclear energy depends largely on the general population and the scientists and engineers who work with it. Whether or not nuclear energy is used depends on the opinions of the people." She also goes on to note that the waste created by reactors is the biggest problem. These are serious young people who face reality, while recognizing that many of their parent's jobs are dependent on nuclear energy.

The tenor of the children is consistently open and not that of an all-knowing teenager. When Pavlo Gubin, of Slavutych, was asked what role government will play in the future of his community, he replied, "I don't know". That remark alone gives me confidence in the future.

It would be rewarding to have a follow-up of these students ten years hence to solicit their views as young adults and see if attitudes on acceptance of decisions by the authorities and dependence on national funding would be the same or how they would evolve. What these children have said is relevant and merits a follow-up.

Robert Neill

Forgotten Fires, Native Americans and the Transient Wilderness. By Omer C. Stewart. University of Oklahoma Press, 2002. Pp. 352. \$39.95 hardcover.

Henry T. Lewis begins *Forgotten Fires* with a lengthy and provocative introduction. Lewis openly admits that had Stewart's manuscript been published in the mid-1950s, it is unlikely that it would have done much to change professional and public thinking about the importance of Indian practices in influencing North American