Sierra Club's "Project Prometheus" Interview with Keystone Center
January 19, 2004

Members of the Sierra Club's Turtle Coast Group met with Peter Adler and Janesse Brewer from the Keystone Center on January 19, 2004. The meeting was held at the Best Western Harborside in Melbourne, Florida.

Sierra participants:
- Cathy Stanton - Turtle Coast Group member
- Kevin Lynn, Turtle Coast Energy Chair
- Greg Kalmbach, Turtle Coast member and Florida Chapter Chair
- Jim Woodfin, Turtle Coast Chair

Below is a very condensed account of this meeting's conversations, not necessarily in chronological order, but grouped by topical category. In this summary, I typically attribute statements only to "we," "us," or "Sierra," rather than to individuals.

Jim Woodfin - January 20, 2004

Background Discussions

Janesse and Peter began the meeting by stating that Keystone's mission is to aggregate opinions from a broad sampling of interested parties. In their report to NASA, they will not quote individuals. They will only report opinions grouped into broad themes. They noted that Keystone often facilitates discussions and interactions between diverse groups to arrive at the "highest and best" solutions to complex problems. This interview is a step prior to that type of process. They mentioned the diverse makeup of the Keystone organization, with corporate, government, NGO and environmentalist representation, including Sierra's Ross Vincent.

We proceeded with the understanding that we were speaking as individuals, not necessarily expressing Sierra Club policies, especially since policies may not have been formulated on all the issues we would discuss.

We described the Sierra Turtle Coast Group's organization and membership, the Florida Chapter, and National Sierra organizations, and how the scope of each issue determines whether it gets Group, Chapter, or National attention.

Peter stated that Keystone was interested in 3 broad categories of questions:
1. What worries you about the Prometheus project and what gives you comfort?
2. How could the background materials NASA provided be improved?
3. Beyond the NEMA process, what can NASA do to better work with the public?

The Interview

1. What worries you about the Prometheus project and what gives you comfort?
- Definitely interested in space research and exploration, and follow its progress at a pretty detailed level
- Concerned that we don't know how to use nuclear power sources safely in space
- We all know people who work in the space program, we are concerned about suppression of "whistle-blowers"
- The space program is an integral part of our lives
- Our local newspaper focuses on the space program

- The launch approval process that extends all the way to the president is not comforting at all. If Halliburton & Lockheed say it's OK, this administration will not hesitate to approve.
- Appalled by "safety" procedures that accept burning up nuclear devices in the atmosphere or plunging them into the ocean
- Fission reactors bring to mind cooling towers, massive containment facilities and power plant problems as in Chernobyl—it's hard to imagine launching nuclear reactors safely into space.
- Deep space exploration is important but not urgent—it's good to do it, but not when it incurs unacceptable risks—the outer planets will still be there in 20 years or 120 years when our technology is less risky
- Suspicions that Prometheus is a front for Star Wars development and other military interests
- Contamination of ocean—impact of global ocean currents, deep ocean life forms, food chain impacts
- Contamination of life forms on other planets when nuclear materials are dumped there
- Disposal of nuclear materials in "safe" orbits—how safe are they for 10,000 or 100,000 years?
- Space junk in earth orbit interfering with future missions
- Need more consideration for low-level radiation—inhaled particles of Plutonium and associated cancer risks
- Money and priorities of federal budget—are they budgeting enough to do this kind of thing safely, and if so, should it receive such high priority vs. other social issues?
- Sincerely believe that NASA does not want an accident - it's not in their interest
- We're probably concerned about the same things as NASA, but the level of concern is very different
- We have benefited from NASA-stimulated technology
- No NASA-employed friends would take the risk of flying on the shuttle
- Decontamination plans that we have read don't seem realistic or feasible
- Impacts are close to home - extraordinarily important to Brevard residents, whether they realize it or not.

2. How could the background materials NASA provided be improved?

- Discrepancy between NASA's 1-in-100,000 stated risk vs. our actual observation of 2 in 275 catastrophic shuttle failures
- We would like to see the actual detailed research that goes into the risk assessments - If we get into this program, it's going to involve many launches and statistically we know there will be failures
- Stark contrast between safety fact sheets for RTGs and Fission reactors—there's a lot that both don't say, especially the fission fact sheet.
- Need material characteristics information about fission reactor fuels and mechanisms
- Need description of how fission components are protected during launch
- We have people in Sierra who are capable and willing to evaluate intricate technical details of risk analyses.
- NASA needs to prepare different levels of information to accommodate a very broad audience—condensing information so that it's understandable to laymen, as well as providing great detail for willing specialists—especially independent 3rd party analysts.
- The fact sheets speak favorably of SNAP-10A without mentioning its short life or the catastrophic demise and contamination caused by SNAP-9A. Can we believe these fact sheets? Include the full record!
- Need to demonstrate a thorough examination of coming nanotechnology that may offer new opportunities to do these things with complete safety
- Need to demonstrate a thorough analysis of the use of relay satellites to boost signals from distant probes to compensate for limited solar energy

3. Beyond the NEMA process, what can NASA do to better work with the public?

- Florida Today sponsored public meetings during the Casini project. During one, a military guy said 1-in-20 failures is "pretty good." That doesn't demonstrate much concern for the wellbeing of this planet's residents.
- Need realistic addressing of worst-case scenarios
- Need independent 3rd party reviews of risk assessments
- Need to include former NASA employees who have become critical of NASA in these risk assessments
- Why not closer cooperation with Europeans—network with them to explore high efficiency solar arrays and other alternative energy sources?
- Why not broaden the agency's scope to "National Technology Administration," encompassing energy independence, transportation efficiency, global warming, etc. and reprioritize goals based on total social needs?
- NASA's environmental record was generally viewed as favorable, with the exception of air pollution associated with launches
- We have had no experience with NASA working with the environmental community.
- Need to fully address the very long term risks—which extend thousands of years—need to seriously consider those kinds of time frames
- We would be glad to have NASA representatives speak at our meetings about these issues
- Need to make sure NEPA assessments are understandable
- Need to make sure NEPA assessments are not politicized
- Need to make sure NEPA assessments are not spun
- Stop perverting science (the attitude that good science = whatever science supports MY view)
- Don't censor whistleblowers and dissenting opinions—bring their concerns into full public dialog and let them stand or fall on their merits.
- Need earlier interaction to give us a chance to participate in the decisions—by the time a NEPA assessment comes out, it's probably too late to change anything.
- Genuine public dialog early enough in the process to allow realistic safety tradeoffs to make a difference in the designs—this is "public relations 101"

Janesse and Peter noted that after interviewing at least 40 people they had identified about 15 general "themes," including:

- Launch accidents
- Information availability
- Risk assessment
- Urgency
- Priority
- Earth orbit disposal
- Social agenda
- Life cycle of materials

During our interview, we hit almost all the themes, while most groups hit only 2 or 3. Janesse attributed this to our close proximity to Kennedy Space Center.

Finally, Peter asked whether we had begun to reassess land-based nuclear power in light of global warming.

- Still deeply concerned about nuclear wastes
- "A little reassessment but not much"
- Conservation and renewable energy offers the opportunity to save much more energy than we derive from nuclear
- We just don't have a long term plan for safely disposing of nuclear material
- Wind and solar technologies offer great potential