

President Reagan has now committed the nation to restoring the basis in fission-power resources for the fusion power age—but he has not committed his administration to fusion power in observance of congressional legislation mandating the year-2000 goal (1980's Magnetic Fusion Energy Engineering Act). Remarkably, under revised budgetary estimates, fusion research under Reagan will receive less funding than it received under Carter—again contrary to spending levels mandated by Congress.

Civilization at stake

No small amount of pressure is being placed on the White House to at least show Mr. Stockman the door when it comes to fusion power budgeting. Indicative was the Oct. 15 speech delivered by the eminent plasma physicist Dr. John H. Nuckolls, of Lawrence Livermore Laboratory, on the occasion of his acceptance of the Maxwell Prize from the American Physical Society. Nuckolls, who led the 1970s effort to initiate inertial confinement (e.g., "laser") fusion research, flatly declared that nothing less than the survival of the human race depends on launching a fusion power development-project that deserves the name "crash program," on the scale of NASA's Apollo moon-shot effort, or the 1940s A-bomb Manhattan Project.

Dr. Nuckolls highlighted the great promise of a variety of lines of research into fusion now under way, and proposed that as part of the pending reorganization of the Department of Energy, magnetic-confinement and inertial-confinement programs be combined. He predicted: "A prototype ICF [inertial-confinement fusion] reactor will be in operation by the turn of the century. . . . The successful development of second generation fusion reactors, economically competitive with Light Water Reactors and High-Temperature Gas-Cooled Reactors for electricity and synfuel production, will signal the dawn of the fusion age. . . . This challenge merits high national priority, and an Apollo-scale commitment of the nation's will and resources."

Nuckolls warned of "geophysical disaster," should some projections for fossil fuel-produced carbon dioxide accumulation in the atmosphere prove true.

Temperature increase, drought, and climatic dislocation are looming sources of holocaust unless it were possible to make mankind's entire energy supply non-fossil in as little as 40 years. But within that timeframe, fast-breeder reactors simply can't produce fission fuel at the required levels. The only alternative is fusion-fission hybrids (of which the earliest projected form is a "super-breeder" or "fuel factory") and hydrogen fuels occurring as byproduct of next-generation fusion reactors.

Nuckolls's demand for a fusion energy "Apollo program" is legitimate, whether some carbon-dioxide-saturation projections are accurate or not. Nuclear

America's foremost regulatory blocks

The principal regulatory obstacles President Reagan has pledged to overcome are these:

Two-stage Licensing: Utilities must apply for two separate licenses from the Nuclear Regulatory Commission, one for construction, and a second for operation of a nuclear plant. All issues of health and safety are reviewed at the construction-licensing stage. And yet, after construction, "intervenor," including any anti-nuclear group, may demand and be granted public appeals hearings to raise the same issues again, including whether demand for electricity justifies operation of the already constructed plant! As an NRC employee described it, the operating license stage is "two years of quibbling." Two proposals are now before the President, one that would empower the NRC to issue operating licenses while hearings are pending or in progress, another which would eliminate hearings on operating licenses altogether.

The Sholly Rule: When environmentalists demanded the right to act as "intervenor" after the NRC amended an operating license to permit release of radioactive gas at Three Mile Island, a federal judge ruled that they had the right to hearings *even if there were no scientific basis for questioning NRC judgment*. Under the Sholly Rule, "anybody at anytime can request a hearing on anything and get it," explains an NRC source. One well-known anybody, Gov. Jerry Brown, used this rule to file suit against the operating of California's Diablo Canyon nuclear plant.

Safety Rules: Nuclear plants are very safe, provided only that established industry standards are met. Yet the NRC has no standard, and "safety rules" have multiplied on the basis of individual NRC engineers' case-by-case judgment or lack thereof. A senior staff member recently warned the commission that "the potential for a negative safety impact caused by the number and scope of requirements has become very real to both the NRC and the nuclear industry. The full significance of the issue may have been underestimated by NRC staff." In short, some "safety" requirements are so disruptive of utilities' established in-plant operating procedures that they produce a potentially hazardous condition where none existed. By establishing formal criteria, inaccessible to frivolous "environmentalist" challenge, the vast number of unnecessary and detrimental safety rules could be eliminated.