

NUCLEAR POWER EMERGENCY PLANNING: POLITICS OF THE TASK

Richard T. Sylves
University of Delaware

Great uncertainty currently prevails in the matter of off-site emergency response planning around U.S. civilian nuclear power plants. The Nuclear Regulatory Commission and the Federal Emergency Management Agency share in review and approval of off-site emergency plans prepared by state and local governments in the emergency planning zone of nuclear power plants. This study examines why off-site nuclear accident planning has been a low federal priority, why the problem is intergovernmentally complex, and why this sub-policy issue remains controversial.

Many histories of U.S. civilian nuclear power reflect government and nuclear industry confidence that the many safeguards and redundancies built into nuclear power plants would make the possibility of an accident with off-site consequences astronomically low.¹ As a result of this belief and due to a long record of reactor operation with no accident producing significant off-site damage or injury, national policy makers were not seriously concerned that a need existed to plan for nuclear power plant disasters. Like many obscure policy issue areas, nuclear power emergency response planning was of little interest to the President, the Congress, or executive branch officials, until the public demanded action. Unfortunately, the public does not usually demand government action until a problem or disaster has already occurred. The nuclear power plant accident

I Colonel Oran K. Henderson, director of Pennsylvania's emergency management unit, commenting on the TMI accident said, "the flaw was the assumption that the possibility of an accident at one of our nuclear power plants was so remote that there was no need to plan for it." (Franklin, 1980). A sample of histories could include Ford (1982), Okrent (1981), and Rolph (1979).

at Metropolitan Edison's Three Mile Island Unit 2 nuclear station was the spark which ignited public demands for action. No single incident in the history of commercial nuclear power has done more to spotlight the need for effective emergency response planning and crisis relocation than the reactor accident at Three Mile Island over the weeks of late March and early April, 1979.²

This study assesses the problems and progress of nuclear power off-site emergency planning in the United States since the TMI accident. U.S. radiological emergency response planning since TMI has been confounded by legal, political, and administrative difficulties and deficiencies. Most of these shortcomings can be attributed to three general factors:

- 1 Nuclear Regulatory Commission (NRC) long-standing disinterest in off-site emergency planning,
- 2 the awkward overlap of NRC and Federal Emergency Management Agency (FEMA) regulatory authority in off-site emergency planning,
- 3 the intergovernmental challenge of coordinating dozens governments, and government agencies, in devising the plan, in paying the costs of emergency preparedness, and in testing the plans to see if those state or local governments can or will act in accord with the plans.

Each of these points will be separately addressed below. A key contention of this study is that the division of responsibility between federal government agencies and the interdependence of separate levels of government, fragments the work of off-site emergency planning. The outcome of this arrangement is a typically American system of checks, balances, and veto powers which produces both public accountability and administrative mayhem.

NRC Reluctance and Inexperience

The Nuclear Regulatory Commission has assigned off-site emergency planning a relatively low priority among its full range of duties. It was not until 1974 that the Atomic Energy Commission, progenitor of the NRC, issued guidelines to be used by state governments in the preparation of their radiological emergency response plans. In spite of 1975 revisions in the

² Reports indicated that more than 50,000 people voluntarily evacuated the area around TMI and plans were in the works during the height of the emergency to evacuate 500,000 people living within a 20 mile radius of the plant (Cooping beyond nuclear gates, 1979). See also Lathrop (1981).

guidelines which made state compliance easier, only four states could demonstrate that they met the conditions set out in the 1975 guidelines by 1978. In 1978, a federal interorganizational committee charged with examining nuclear power emergency response planning concluded that NRC's handling of off-site planning was grossly underfunded and ineffective (Pollock, 1978; see also U.S. House of Representatives, 1979:8).

Given the administrative history of the NRC, it is clear that off-site emergency planning has been a responsibility which falls much outside of its domain. Created from the regulatory units of the former Atomic Energy Commission in 1975, the NRC has been a techno-scientific regulatory body responsible for policing the operation of commercial nuclear power plants. While the NRC regulates other aspects of atomic energy production and use, the organization has virtually no experience in managing civil defense, evacuation management, disaster relief, and it has little experience in planning local public and private response to technological emergency situations. These duties are alien to NRC's primary mission. Until the accident at Three Mile Island, the NRC had never been seriously forced into directing disaster mitigation actions in response to an eminent public danger.

Prior to TMI, the NRC had only half-heartedly urged state governments to plan for nuclear accidents. Congressional hearings held in the wake of the accident disclosed that NRC regulations then in effect "encouraged" states with nuclear facilities to prepare and submit radiological emergency response plans. Submission of these state plans to the NRC was "strictly voluntary." No penalties were imposed upon states that did not have approved plans (U.S. House of Representatives, 1979:1). This loophole led to distortion in the off-site emergency planning process. State officials logically concluded that their emergency plans were both non-essential and superfluous. Moreover, NRC officials drafted a rule in 1980 which declared that a utility's own off-site emergency plan could be considered sufficient to outweigh deficiencies in state or local government plans (Wall Street Journal, 1980a; 1980b).

As a result of these matters, nuclear utilities had to assume an additional burden for which they were ill-equipped and ill-prepared. The NRC required electric utilities with nuclear plants or projects to formulate off-site, as well as on-site emergency response plans. The utilities had for many years prepared on-site plans. These specified the actions which the utilities would take on the grounds of the nuclear generating station in the event of a reactor-related accident. NRC's rules for off-site planning now meant that the utility would have to prepare

elaborate scenarios of action which would be directed to the emergency planning zone outside the plant fence. At this writing, the standard emergency planning zone (EPZ) of U.S. commercial nuclear power plants is the area within a circle of ten mile radius with the nuclear plant at the origin of the circle.

When utility officials testified at congressional hearings in May 1979, it became obvious that they had prepared offsite plans without adequate consultation with state and local officials. At the hearings, state and local officials responded that they had no knowledge of, or familiarity with, the utility's off-site plan, even though these plans invariably denoted the emergency actions that were to be taken by these very same state and local officials (U.S. House of Representatives. 1979:5).

Such an outcome is not implausible, because the NRC had given little emphasis to off-site planning. Utility officials requesting NRC permits and licenses therefore, had little reason to attach much significance to off-site emergency planning. Preoccupied with the immensely complex problems of siting, building, and safely operating nuclear generating stations, utility executives had little appreciation of the problems of surrounding communities likely to be put at risk in the event of a catastrophe at the plant. More compelling were problems such as, where to store high level nuclear waste, or how to finance construction of the facility when the costs of capital were oppressively high. Compounding these problems for utility executives were increasingly intransigent or unresponsive state utility commissions which often blocked rate increase requests or imposed, where legally possible, restrictions on the nuclear facility itself. The burgeoning body of regulation imposed by the Atomic Energy Commission until 1974, and by the NRC from 1975 onward, forced almost constant change in plant operation and in plant engineering design. These regulatory requirements escalated the cost of nuclear plant construction and operation. For most utility executives, these problems easily eclipsed the significance of off-site emergency response planning.

Furthermore, electric utility companies operating nuclear power plants were not the parties held accountable for off-site emergency response actions. This gave them little incentive to devise operational plans. Utility companies had little to gain and much to lose by asking state and local authorities in the vicinity of the nuclear unit to assume new emergency planning burdens, particularly when these burdens were likely to be expensive and controversial for all involved parties. To some degree, the Price-Anderson Act of 1957 insulated nuclear electric utilities from assuming the full liability for claims in the event of widespread damage produced from a nuclear plant catastrophe.

While this was not an invitation for nuclear utilities to become careless in the operation of their nuclear plants, neither was it a measure which enjoined utilities to consider the full range of social costs a reactor accident might incur.

A final factor which may encourage NRC indifference to off-site emergency planning stems from its relationship with the Federal Emergency Management Agency. This moves us to the next topic.

NRC and FEMA Regulatory Authority Overlap

Triggered by numerous congressional investigations, as well as by the issuance of the Kemeny Commission's Report on the TMI accident, a new emergency preparedness rule took effect November 3, 1980. Utilities with nuclear power plants were to submit upgraded emergency plans, they were directed to prepare emergency procedures necessary to activate the plans, and they were to supply evidence that the administrative and physical means were set forth for alerting and instructing the public within a 10 mile emergency planning zone. Each respective step was to have a time deadline, and the NRC sought to accomplish all three steps by February 1, 1982.³

Under a Memorandum of Understanding dated November 4, 1980, the NRC and FEMA agreed that NRC would determine the adequacy of nuclear utility emergency plans, on-site and off-site, while FEMA would assess the appropriateness of state and local government off-site emergency plans. Under the agreement, the NRC reviews the FEMA findings and determinations in order to judge the over all status of emergency preparedness. FEMA can provide expert witnesses in NRC's licensing process.⁴

FEMA's involvement in nuclear power emergency planning stems directly from the TMI episode. The chaos and controversy produced in part by the NRC's mismanagement of emergency response operations at Three Mile Island, spurred President Carter to assign FEMA, rather than the NRC, major new responsibilities for nuclear power plant off-site emergency

³ From NRC-FEMA Joint Quarterly Report to Congress on Emergency Preparedness, July 1, 1982, to September 30, 1982, unpublished document mailed to Senator Alan K. Simpson, October 22, 1982. See Table 3,2-3. Cited here after as "NRC-FEMA Joint Report."

⁴ NRC-FEMA Joint Report.

planning and preparedness (Franklin, 1980).⁵ Specifically, FEMA issues guidelines and sets out criteria to be used by state and local emergency planning authorities. With the aid of Regional Assistance Committees, FEMA reviews and judges the adequacy of state and local nuclear power emergency response plans (U.S. Federal Emergency Management Agency, 1982:6). However, the NRC retains the power to review emergency response plans as they are submitted, and the NRC can appraise plan implementation at each site. NRC certifies both licensee and official off-site (state and local) emergency preparedness at each atomic facility. That is, NRC passes judgment on the adequacy of the plant operator's off-site plan and the plans of states and municipalities whose jurisdictions occupy the plant's emergency planning zone.

Therefore, NRC and FEMA both address the problem of off-site planning. In the case of testing emergency plans which are already in effect, the NRC and FEMA have a dual oversight function. FEMA evaluates the performance of state and local authorities in the test exercise. The NRC evaluates the plant operator's performance in the test exercise. When state and local emergency preparedness is considered during NRC permitting and licensing proceedings, the NRC is free to ponder the findings and recommendations of FEMA regarding local government preparedness. If FEMA determines that local preparedness is unsatisfactory, the NRC is not compelled to delicense an operating nuclear power plant. However, as of April 1, 1981, utilities seeking a full power operating license for new nuclear plants will not be issued such a license until emergency preparedness is deemed acceptable by both the NRC and FEMA (U.S. Federal Emergency Management Agency, 1982:97-99).

So for new atomic generating units, the NRC and FEMA share authority in judgment of emergency preparedness. However, for existing nuclear units licensed to operate before April 1, 1981, the NRC is free to follow or to disregard FEMA evaluations and recommendations pertaining to state and local emergency plans. This awkward relationship has caused administrative friction, if not enmity, between NRC and FEMA officials.

Consequently, NRC and FEMA roles in offsite emergency activity have been poorly defined and divided. Failure to assign exclusive authority and ultimate accountability to one or the

⁵ One Senate report castigated the NRC for not ordering an evacuation of the area around TMI within hours of the accident, rather than waiting two days to issue a call for the evacuation of children and pregnant women (Hershey, 1980).

other agency, results in poor inter-agency coordination between NRC and FEMA. Splitting state-local nuclear power emergency planning and utility licensee emergency planning, such that FEMA oversees the former and NRC oversees the latter, results in a failure to synchronize off-site and on-site emergency response activities. Moreover, this division of labor tends to segregate state and local emergency preparedness evaluation from reactor licensing decisions. Approved licenses do not necessarily embody adequate off-site emergency response plans. Finally, the emergency planning overlap also tends to relegate this type of planning activity to the backwater of each agency's operations (Collins, 1981:83-84, 88).

The Issue of Intergovernmental Coordination

The U.S. nuclear accident planning remains a challenge in the sense that a wide assortment of state and local organizations must be orchestrated in preparation and testing of plans. Nuclear power off-site emergency planning is fundamentally a local phenomenon (Perry, 1982:13). State and local governments, in conjunction with the nuclear electric utility, are expected to draw up off-site emergency plans. Depending on the location of the plant, a wide variety of local entities could be involved. Counties, cities, townships, boroughs, villages, and other subdivisions, as well as special district governments may be parties at interest. Within these organizations political and administrative actors plan development of emergency response scenarios. Drawn into this is a plethora of public and private professional groups: police, fire, health, transit, schools, rescue units, volunteer organizations, public works, other planning units, housing and sheltering organizations, communications officials, military units, etc. The point is that nuclear power emergency planning is profoundly affected by the political geography which exists within each reactor's EPZ. Dynes (1974) and Chenaut (1979) report in separate studies, that jurisdictions well outside the EPZ are also impacted by a nuclear accident if evacuees relocate to those areas expecting emergency and sheltering services.

Because off-site plans rest upon local cooperation and local resources, local (and state) governments could decline to cooperate, as a number indeed have. Recognizing the favorable bargaining position which local government has in the case of new plants seeking NRC license approval, county officials in a number of Missouri counties have forced Union Electric, the utility building the Callaway nuclear station, to reimburse

these local governments for more than the cost of nuclear power emergency planning alone.⁶

In the case of New York State, Rockland County, located across the Hudson River from the Indian Point reactor units, has elected to withdraw from all emergency planning activities needed for the Consolidated Edison facility. New York State has assumed what would have been Rockland County's obligations in emergency preparedness. More sensational has been Suffolk County's refusal to cooperate in devising an emergency plan needed for the recently completed Shoreham nuclear station, of Long Island Light Company (Lilco). At this writing, the U.S. Department of Energy is reported to be exploring the possibility that it could "deputize" Lilco employees to effect the off-site emergency response, in place of county and local authorities. New York State Governor Cuomo has promised that he will not use state authority to override the wishes of Suffolk County in its dispute with Lilco over the matter of emergency planning for the Shoreham reactor (Wald, 1984).

To achieve coherence in the substance of each plan, extensive inter-local and state-local coordination are needed. However, political and jurisdictional conflicts among localities and between states and their respective local governments often undermines the collective capacity of these governments to plan and respond to nuclear accidents. The more plans required for any single atomic station, the greater the likelihood that one or more governments will refuse to cooperate in formulating and testing an off-site plan. When governments must prepare off-site plans for nuclear reactors located in other states, officials of these governments may be unresponsive or hostile. If residents living in jurisdictions within a reactor EPZ are not consumers of the electric power produced by the facility, emergency planning opposition is also probable.

At the present time there are 84 reactors licensed to operate at full power in the United States. About 50 nuclear power plants are in some stage of construction or are waiting issuance of an operating license. It is difficult to argue that all, or even most, of these facilities are, or have, experienced state or local government opposition or non-cooperation in preparation and

⁶ NRC-FEMA Joint Report, Part II, Table VII. The localities involved are Callaway, Gasconade, Osage, and Montgomery. All have indicated their requirement for funding of equipment and personnel to Union Electric prior to their approval of local plans. The table referenced above outlines five other similar cases around the U.S. and more cases have been excluded (Wright Restates Callaway's Position, 1982).

maintenance of off-site emergency plans. Nevertheless, the issue of off-site emergency planning has been contested in many of the 28 states with nuclear power plants. Moreover, many plants licensed to operate still do not have off-site emergency plans which are fully approved, and testing of existing plans continues to unearth problems and deficiencies which demand difficult reformulations. The task of off-site emergency planning has become so burdensome, complicated, and sometimes expensive, that NRC officials are proposing to collapse the ten mile EPZ to two miles radius of the plant in order to facilitate planning and plan testing (Perlez, 1983).

Concluding Observations

Off-site nuclear accident planning continues to generate controversy from one nuclear plant site to the next, from old plants to new plants, such that pressure is mounting for some definitive national action. There seems to be two general paths toward the mitigation of these problems.

One path might represent a decisive victory for local governments. This would occur if the national government affirmed the right of local government to decide whether or not, and in what fashion, local governments will participate in emergency planning necessary to the operation of nuclear power plants. Through this path, local officials could bargain from strength in transactions with utility executives because local authorities could block formulation of an emergency plan needed by the utility as a prerequisite to plant licensing. This case is typified by Long Island Light Company's dispute with Suffolk County, N.Y., over the evacuation plan needed for the Shoreham Nuclear Generating Station (Mitchell, 1981).

If local officials decided to discontinue their contribution to local emergency preparedness in this realm, perhaps after a change of local political administration, the utility might again find that its NRC operating license was in peril. On this path, states and municipalities within the emergency planning zones would have a veto power over nuclear plant operation by virtue of their ability to block formulation of the necessary off-site plan and by their power to withdraw local cooperation and services necessary to keep an approved plan operational. This option may curtail exploitation of small rural and suburban jurisdictions by powerful electric utilities usually using their reactors to supply power to a mass or ratepayers who live far from the plant and far from the area likely to experience radiation contamination in the event of a mishap.

A second and quite different path can also be identified. The forces of "technocratic pluralism" may triumph (Wright, 1982:15). This means that the national government, perhaps in concert with certain state governments, preempts local powers that have been used to block or obstruct construction or operation of utility-owned atomic plants. Local emergency planning entities, and the health and safety organizations they engage, would be enjoined to comply with uniform planning directives. Municipal officials could no longer elect to withhold emergency service activities or resources needed to implement the plan. Under this scenario, there would be a strong probability that local governments would be entitled to some compensation from the utility for their involuntary participation.

The key objective of this preemptive path would be to terminate an intolerable condition of overlapping authority which has contributed to regulatory mayhem. Presumably, greater administrative rationality would be achieved in nuclear accident response planning such that local governments could no longer exact unfair concessions from utilities as the price of cooperation in emergency planning.

Both paths have unattractive features. Yet, any compromise between these two extremes is likely to perpetuate a condition of nuclear off-site emergency planning "limbo" which irresponsibly jeopardizes public health and safety, or which delays the start-up or operation of plants, costing utility's and perhaps their ratepayers huge sums of money.

Finally, much would be gained if the NRC took a more concerted interest in off-site emergency planning, insuring that it becomes a legitimate stage in the reactor licensing process. FEMA should be empowered to confirm or veto all off-site emergency response plans, whether for new or existing plants. Given the high degree of regulatory interdependence in this area, officials at all levels of government must work to forge reasonable intergovernmental agreements which are fair to the off-site community and to the nuclear utility.

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