

12/17/2007  
Three Mile Island Alert  
315 Peffer St.  
Harrisburg, PA 17102

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re: RIN 3150- AI19 Consideration of Aircraft Impacts for  
New Nuclear Power Reactor Designs

DOCKETED  
UISNRC

December 17, 2007 (4:10pm)

Secretary, U.S. Nuclear Regulatory Commission

OFFICE OF SECRETARY  
RUII FMAKINGS AND  
ADJUDICATIONS STAFF

Dear Ms. Vietti-Cook,

Please add these comments from Three Mile Island Alert to the record (RIN 3150-  
AI19.)

1. Piping which is routed between two buildings, e.g. the reactor and auxiliary buildings, (especially reactor coolant pipes) must be designed with shock absorbing anchor points set sufficiently apart to allow for a rapid movement of the pipes caused by explosions or aircraft impact. This design consideration would not be limited to aircraft fuel explosions but also account for surface bombs and explosive laden aircraft. The key consideration is that the lateral acceleration caused by an aircraft impact or by explosives can far exceed the earthquake-proofing measures currently employed at nuclear plants.
2. Additional electrical supplies to maintain or regain control of the reactor must be constructed. These would include underground power lines and a secondary set of Emergency Diesel Generators located far from the other set.
3. Additional electrical busses should be built into various buildings so that a mobile diesel generator can drive to the area that is experiencing a station blackout, plug into the busses and restore power. These mobile generators would be parked far enough away from the reactor to remain undamaged during an aircraft impact and fire.
4. All safety related storage tanks, and especially the diesel fuel tanks, must be protected from flying missile debris. These tanks must be located far enough from other buildings to prevent additional fires or the release of hazardous gases, liquids or materials which would impede the responders' ability to provide mitigating action.
5. The nuclear fuel systems should be redesigned so that new and spent fuel is stored below ground level. Fuel canals and crane systems can be redesigned to transport fuel assemblies between the increased difference of the reactor's elevation to the fuel storage and spent fuel storage elevations. The fuel buildings must be strengthened.
6. We remind the Commission that electrical wiring has never been tested under "accident conditions" whereby temperatures may exceed the limits of the electrical cables causing catastrophic failure. Therefore, with regard to this rule, all new designs should

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only incorporate electrical cables which have been tested to meet accident condition stresses which can account for the temperatures of nearby aircraft fires and the thermal effects within a building experiencing a fire.

Additionally, the NRC shows poor judgment by providing waivers to licensees which have safety related problems with critical electrical cables. That makes two strikes against defense in depth.

See <http://www.newsday.com/news/local/wire/newyork/ny-bc-ny--indianpointlicens1214dec14,0,1821392.story>

7. We believe that the proposed rule is too narrow with regard to the description of aircraft as being large commercial aircraft. A small private aircraft carrying explosives could have even greater adverse effects than a commercial aircraft. Also, highly maneuverable radio controlled aircraft carrying high explosives could match the damage of commercial aircraft and do it with pin point accuracy at virtually any angle of impact.

8. By including the consideration of the "angle of impact," we believe that the NRC is allowing too much "wiggle room" for design considerations to fully account for deliberate aircraft attacks. Specifically, the blast effects of an explosive laden aircraft are of equal concern or even more consequence than the proposed rule's impact effects where "angle of impact" is referenced. "Angle of impact" considerations serve to weaken the rule and should not be included in assessments.

9. We deem it necessary that plant designers create multiple entrance points to a reactor site for emergency responders. These entrance points must be protected and guarded to prevent their destruction. Otherwise the offsite responder plan is ineffective.

10. The NRC should not give credit to any reactor site for new safety or security assessments associated with this rule unless the measures are tested (as is practical) and actually constructed or enacted.

11. Containment building must be strengthened, particularly the containment domes.

12. The NRC should never allow a reactor design where containment integrity is weakened as a trade-off for modular construction. The so-called "Pebble Bed" reactor is an example of this design where a "citadel" is employed.

13. The NRC should not allow new reactors to be built within five miles of an airport.

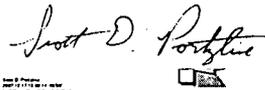
14. The NRC has no real means of determining if current plants can extinguish a large fire caused by an aircraft impact. The same would be true for new reactor designs. Therefore, the NRC's reliance upon the designers and licensees assessments is ineffective and represents a significant safety threat.

At a recent meeting with Exelon representatives at Three Mile Island, I was told that they could handle an aircraft fire without outside assistance. That certainly was a grandiose "pipe dream." TMI required offsite assistance with several small fires in recent years.

15. We believe that new designs should incorporate aircraft deflection shields such as those proposed by Dan Hirsch (Committee to Bridge the Gap) or Ted PotoI (MIT professor).

16. Edward Teller (father of the hydrogen bomb) believed that nuclear plants should be built underground.

17. We remind the NRC that the father of the nuclear navy, Admiral Rickover, was ultimately against commercial nuclear power and testified to congress that nuclear power plants should not be constructed.



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**Date:** Mon, Dec 17, 2007 3:10 PM  
**Subject:** official comment for RIN 3150- AI19 Consideration of Aircraft Impacts for New Nuclear Power Reactor Designs.

Please add these comments to the NRC's record for RIN 3150\* AI19 Consideration of Aircraft Impacts for New Nuclear Power Reactor Designs.

Scott Portzline  
Three Mile Island Alert Security Consultant  
pdf file attached

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