The final challenge or lesson concerned the timing and process of the ingestion pathway sampling. HHS R&L began requesting information from NEMA when the plume phase ended. Requests were generic and included: dairy, surface water, forage, produce, eggs and meat. In retrospect, a standard list in order of priority could be developed as part of the planning process and submitted to NEMA early in the intermediate phase. In addition, the USDA representatives suggested including food processing plants. The protective action guidance for ingestion was utilized during the exercise. The distances that were recommended extended out as far as 60 miles in areas that were not evacuated or restricted. There were separate recommendations for each type of food or milk product and the restrictions varied from 30 to 60 miles out. Figure 3 is a map showing the area restricted for milk ingestion. These new areas were initially discussed looking at the same map which identified the restricted area, which did cause some confusion. The area that had ingestion restrictions overlapped the restricted area and the various ingestion restrictions were not uniform. Considering public perception of risk, it seemed unlikely that anyone would want to remain in an area known to have ground deposition, despite assurances from government officials that it was safe. We considered and discussed how the local population would react to the safety recommendations such as: do not eat anything grown in this area, wash, scrub or peel all your home grown vegetables, and only let your children play outside a few hours per day. Options for presenting this information to the local population were reviewed, and it was decided that small group discussions would be best. Concerns were raised about whether any foodstuffs containing radioactivity would ever be released, regardless of the protective action levels. From our perspective, it was more likely that foodstuffs would be condemned for human use,(with a suitable buffer zone), to assure that the other agricultural products from the State would not be adversely impacted. For this exercise, we did follow EPA 400 and advised the Governor's authorized representative to:

- condemn milk and divert milk,
- not introduce meat livestock into commerce,
- condemn forage or divert to non-human use pathways,
- shrink the stored feed area for lactating animals, and
- condemn produce or divert to non-human food pathways.

CONCLUSION

In summary, our focus going into the exercise was primarily on the technical methods to be used to arrive at our recommendations. However, we should have utilized different maps for the restricted area and the ingestion pathway restrictions Communications would have been improved by providing a clear introduction to the phase and component for recommendations (i.e., these are for the restricted zones and these are the ingestion restrictions). The same maps and forms for recommending protective actions may not fit the intermediate phase. New

approaches may be needed to adequately frame the recommendations and to apprise the emergency management agency and the local authorities. Additional table-top exercises would help both the health and emergency management agencies understand the different phases and steps involved in the intermediate phase. Finally, the local authorities should be more fully involved in planning and response if they are to understand how to accomplish the needed protective actions.

REFERENCES

1. EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.

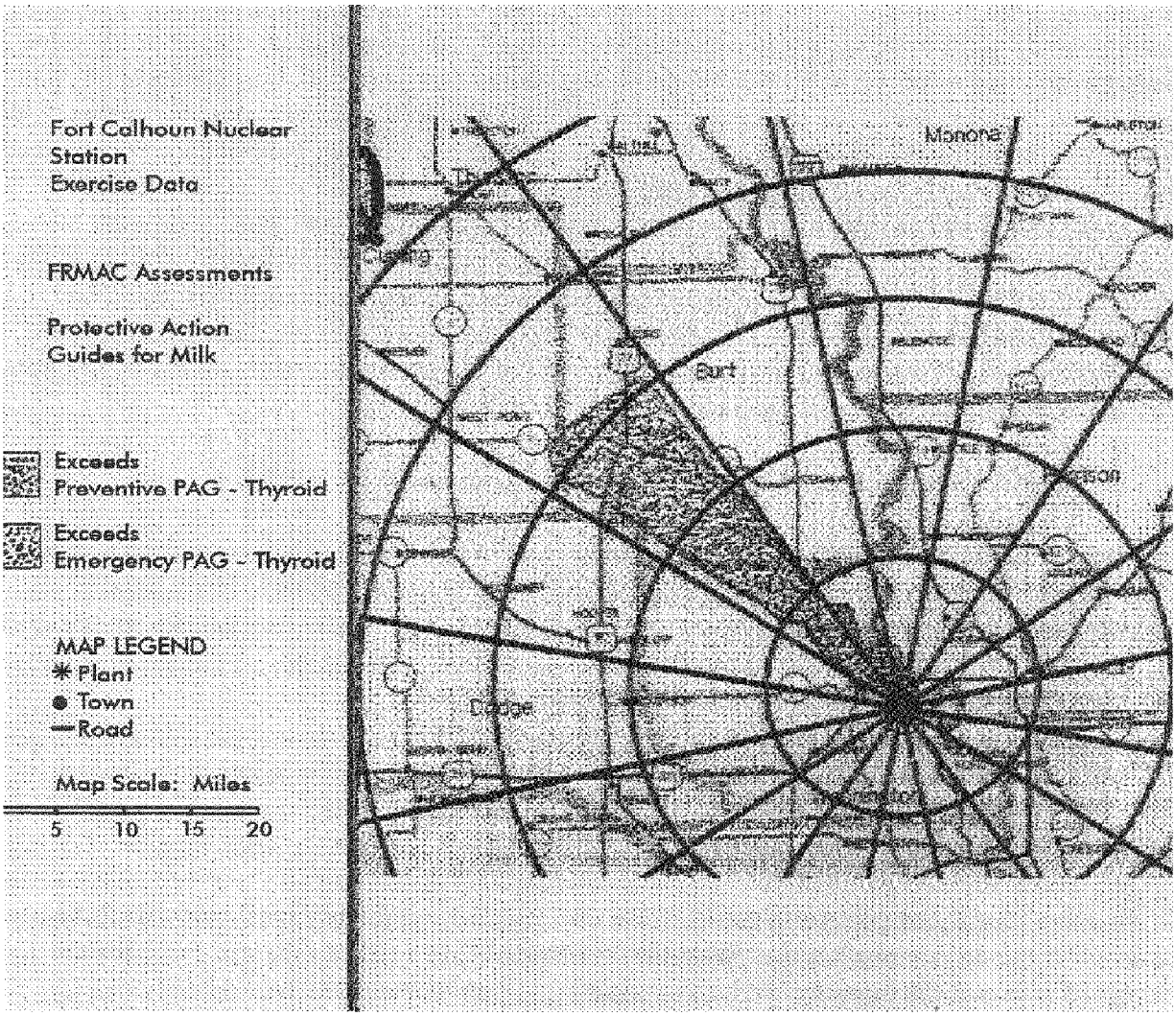

FIGURE 3 - Ingestion Zone Restrictions for Milk