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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges
Sheldon J. Wolfe, Chairman
Dr. George C. Anderson
Dr. Hugh C. Paxton

SERVED JUL 2 1984

In the Matter of)	(NRC Docket No. 50-482 OL)
KANSAS GAS & ELECTRIC CO., <u>ET AL.</u>)	ASLBP Docket No. 81-453-03 OL
(Wolf Creek Generating Station, Unit No. 1))	July 2, 1984

INITIAL DECISION
(Operating License)

Appearances

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INITIAL DECISION

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OPINION

I. INTRODUCTION

A. BACKGROUND

On May 17, 1977, the Nuclear Regulatory Commission ("NRC") issued a construction permit to the Wolf Creek Generating Station, Unit No. 1 ("Wolf Creek"). Wolf Creek is located in Coffey County, Kansas, approximately 53 miles south of Topeka, 75 miles southwest of Kansas City, and 100 miles east-northeast of Wichita. On August 5, 1980, Kansas Gas and Electric Company ("KG&E"), Kansas City Power & Light Company, and Kansas Electric Power Cooperative, Inc. (collectively "Applicants") filed an operating license application for Wolf Creek.

Wanda Christy and Mary Ellen Salava ("Intervenors") sought a hearing and were admitted as Intervenors based on a contention challenging the workability of the emergency evacuation plan. Kansans for Sensible Energy ("KASE") was admitted as an Intervenor together with its contention on Applicants' financial qualifications.¹

¹ In an unpublished Order of June 9, 1982, the Board dismissed KASE as a party and its contention because, effective March 31, 1982, the Commission had amended its regulations to remove financial qualifications issues from, among other things, proceedings involving operating license applications by electric utilities. Upon appeal by KASE, the Appeal Board held the appeal in abeyance pending a decision in a federal court upon a petition for review of the amended financial qualifications rule. On February 7, 1984, in New England Coalition on Nuclear Pollution v. NRC, 727 F.2d 1127 (1984), the Court of Appeals for the District of Columbia granted the petition, and remanded the rule to the

(Footnote Continued)

Following the completion of initial and supplemental discovery, the parties negotiated, and the Atomic Safety and Licensing Board ("Licensing Board") ultimately adopted over 300 extremely detailed contentions on the workability of emergency evacuation, which were grouped under thirty-two headings. (Unpublished Order of July 28, 1983). Some of these were subsequently withdrawn, leaving 216 contentions admitted as issues in controversy.

Evidentiary hearings took place on January 17-21, 23-26 and February 14-16, 1984 in Burlington and Emporia, Kansas. Limited appearance statements were also taken. During the course of the hearings, the Federal Emergency Management Agency (FEMA) tendered a document entitled "Interim Findings On The Adequacy Of Radiological Emergency Response Planning By State And Local Governments At The Wolf

(Footnote Continued)

Commission for further proceedings consistent with its opinion. KASE moved for reinstatement, and, on April 30, 1984, the Appeal Board extended the time for the filing of responses to four days following the issuance of the Commission's new policy statement, which, it understood would be issued within a few days. The Financial Qualifications Statement of Policy, dated June 7, 1984, 49 Fed. Reg. 24111 (June 12, 1984), stated that the Commission's March 31, 1982 rule (eliminating case-by-case financial qualification review requirements for electric utilities) will continue in effect until finalization of the Commission's response to the Court's remand, and directed the licensing and appeal boards to proceed accordingly.

In addition, we would note that we are aware of the decision in Union of Concerned Scientists v. NRC, No. 82-2053 (D. C. Cir. May 25, 1984). We understand that the Court's mandate will not issue for forty-five days.

Creek Generating Station, Burlington, Kansas (December 13, 1983, revised January 5, 1984)." This document was admitted into evidence as FEMA Exhibit 3. Also, the Coffey County Contingency Plan for Incidents Involving Commercial Nuclear Power, Revision September 1983, and the State of Kansas Plan, Annex A, Nuclear Facilities Incidents Response Plan, to Assistance R, Nuclear Emergencies of the State Disaster Emergency Plan, September 1983, were admitted respectively as Applicants' Exhibits 1 and 2.

The Applicants filed their proposed findings of fact, conclusions of law and brief in the form of a proposed initial decision on March 20, 1984. The Intervenors filed a similarly captioned submission on March 30, 1984, and on April 9, 1984, the NRC Staff and the Federal Emergency Management Agency filed a joint submission. Applicants filed a reply on April 19, 1984.

B. CONTENT OF OPINION AND FINDINGS

The first part of this Initial Decision begins with the Licensing Board's Opinion, which encompasses an Introduction, the text of an opinion by the Appeal Board addressing Emergency Planning Regulations, an analysis of the Contentions, and a Conclusion.² The second part

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We relegate to a footnote a matter raised by Intervenors in their brief under the heading "Issues In Controversy." In an unpublished Memorandum and Order of January 5, 1984, the Board had
(Footnote Continued)

of the Initial Decision consists of the Board's Findings of Fact, Conclusions of Law, and Order.

It should be noted that all of the proposed findings of fact and conclusions of law submitted by the parties that are not incorporated directly or inferentially in this initial decision are rejected as unsupported in law or fact or as unnecessary to the rendering of this initial decision. Further, it should be noted that, at this, the operating license stage of this proceeding, we pass only on contested matters. While we have the residual power to delve into any serious matter, even if no party has put it into issue, we have determined that there were no serious matters which we should raise sua sponte, and

(Footnote Continued)

admitted a late-filed contention which alleged that the Town of Waverly and certain of its schools should be included in the plume exposure pathway emergency planning zone. Via a stipulation executed by all the parties, it was agreed, among other things, that Intervenor withdrew the contention, that the expansion of the EPZ to include Waverly and its schools would be shown in the Coffey County Plan, that various procedures or items would be provided for in the County Plan, and that other items would be furnished to Waverly schools and households. The Board accepted this stipulation on February 24, 1984 and it was admitted into evidence as All Parties' Exhibit 1. The Intervenor now urge in their brief that the operating license should not be issued until all the conditions specified in the stipulation are set forth in the County Plan and until the Applicants and Coffey County have demonstrated that they have met all the conditions in the stipulation. Intervenor cannot be heard to advance such an argument. The Waverly Contention has been withdrawn as an issue in controversy, and the Intervenor did not reserve in the stipulation any right to raise these restrictions. Moreover, in having accepted the benefits of the stipulation, the Intervenor are estopped from making such an argument. Toledo Edison Co., et al. (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 767-68 (1975).

thus, the decision as to all other matters which need be considered prior to the issuance of this operating license is the responsibility of the NRC Staff and it alone. 10 C.F.R. §§ 2.104(c), 2.760a; 10 C.F.R. Part 2, Appendix A, VIII(b); Consolidated Edison Company of New York, Inc. (Indian Point, Units 1, 2 & 3), ALAB-319, 3 NRC 188(1976).

Finally, it should be noted that, pursuant to the decision in Virginia Electric and Power Company (North Anna Nuclear Power Station, Unit Nos. 1 and 2), ALAB-491, 8 NRC 245(1978), the NRC Staff stated in the Safety Evaluation Report of April, 1982 (Staff Exhibit 2), that it would therein evaluate thirteen applicable unresolved generic safety issues. With respect to twelve of these uncontested issues, the Staff explained why operation could proceed even though an overall solution had not been found - as to each of these the Staff concluded that Wolf Creek could be operated before ultimate resolution without undue risk to the health and safety of the public. We conclude that the Staff has taken these issues into account and we are satisfied that the Staff has dealt appropriately with these generic safety issues. However, with respect to A-46 Seismic Qualification of Equipment in Operating Plants, the Staff stated that it had not completed the seismic review of equipment in the Wolf Creek plant and would report on its review in a supplement to the SER. Since Supplements 1-4 did not address this matter, in a letter of June 5, 1984, the Board requested that the Staff provide, in affidavit form, a full and detailed explanation as to why it is acceptable to permit Wolf Creek to operate in the face of this safety

issue under study, and, although this was an uncontested issue, invited comments by the other parties. The Staff attached to its covering letter of June 14, 1984, the affidavits and professional qualifications of two Staff members. The Applicants timely submitted their comments; however, FEMA and the Intervenors did not submit comments. On June 27, 1984, the Board reopened the record solely to admit (a) the Board's letter of June 5, 1984, as Board Exhibit 1, (b) the Staff's submission of June 14, 1984, as Staff Exhibit 3, and (c) Applicants' letter of comments dated June 21, 1984, as Applicants' Exhibit 7.

One Staff member, the Task Manager in the Generic Issues Branch of the Division of Safety Technology, whom we deem competent to attest to the matters in his affidavit, stated that unresolved safety issue A-46 had been incorrectly included in the Wolf Creek SER because Section 3.10 of NUREG-0800 requires that plants like Wolf Creek whose construction permit applications were docketed after October 27, 1972, should be designed to meet the current seismic design criteria. After reading NUREG-0800, we agree. Apparently, in order to present a complete picture to the Board, another cognizant Staff member, a mechanical engineer in the Equipment Qualification Branch, proceeded to state in substance that the seismic qualification review team's site audit in December, 1983 showed that the seismic and dynamic qualification program of equipment as installed at Wolf Creek met the requirements of specified current licensing criteria, and that the Staff anticipated by the fuel load date of Wolf Creek in October, 1984 that all open items

related to the site audit will have been resolved. He also opined that that USI A-46 had been incorrectly included in the Wolf Creek SER since it applied only to the seismic qualification of equipment in operating plants. We agree - A-46 reflects that its objective "is to establish an explicit set of guidelines that could be used to judge the adequacy of the seismic qualifications of mechanical and electrical equipment at all operating plants in lieu of attempting to backfit current design criteria for new plants." (Emphasis added).

Thus, we conclude USI A-46 is inapplicable as an unresolved generic safety issue in the instant case.

II. EMERGENCY PLANNING REGULATIONS

In Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1093-94 (1983), the Appeal Board stated as follows:

In the wake of the March 1979 accident at Unit 2 of the Three Mile Island facility, the Commission undertook "a formal reconsideration of the role of emergency planning in ensuring the continued protection of the public health and safety in areas around nuclear power facilities." 45 Fed. Reg. 55402 (Aug. 19, 1980). Accordingly, the Commission promulgated regulations requiring, prior to the issuance of an operating license, a finding of "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 CFR §50.47(a)(1). Adequate protective measures for offsite, as well as onsite, are required. The Emergency Planning Zone (EPZ) concept, adopted as an added conservatism to the Commission's "defense-in-depth" philosophy, provides the means of implementing offsite emergency preparedness. 45 Fed. Reg. at 55406. The regulations set forth 16 emergency planning standards and define the areas of responsibility of the licensee and state and local organizations concerned with emergency responses. (10 CFR §50.47(b). See also 10 CFR Part 50, Appendix E.) In addition,

NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." Rev. 1 (November 1980), prepared jointly by the NRC and FEMA, provides guidance for developing and reviewing emergency plans.

In the instant case, the Board took official notice of NUREG-0654, Rev. 1 (November 1980) at transcript page 457.

III THE CONTENTIONS³

1. Initial Notification and Official Communications (Fdgs. 1-5).

Contention 1(e) alleges that the County Plan does not make adequate provision as to how the Sheriff will notify the U. S. Corps of Engineers, U. S. Fish and Wildlife Service and the Kansas Fish and Game Commission once the decision to evacuate has been made, and thus that the time estimated for evacuation will be longer.

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As the Introduction reflects, supra, 216 contentions were admitted as issues in controversy. Only the Applicants and FEMA presented direct testimony with respect thereto - the Intervenor and the NRC Staff cross-examined. At the beginning of the hearing and upon the closing of the record, pursuant to 10 C.F.R. § 2.754, the Board directed that all parties should file proposed findings of fact, conclusions of law and briefs and warned that, if this was not done by any party, such a party would be deemed in default. (Tr. 150, 2369-70). Notwithstanding these orders, the Intervenor failed to file proposed findings of fact, conclusions of law and a brief with respect to approximately 161 of these contentions and are deemed to be in default. Florida Power & Light Co. (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-280, 2 NRC 3, 4 n.2 (1975). Indeed, the Intervenor oftentimes only addressed limited aspects of the remaining 55 contentions or changed the thrusts thereof - we deem, that the Intervenor have abandoned other aspects or thrusts and thus we consider and decide only these contested narrowed aspects or changed thrusts.

Changing and/or limiting the thrust of this contention, Intervenors argue that the Coffey County Contingency Plan for Incidents Involving Commercial Nuclear Power (the County Plan) is deficient because the above-identified three agencies located at the John Redmond Reservoir are not manned 24 hours a day to receive emergency telephone calls, and because, as of the date of the hearing, tone alert radios had not been installed in the Agencies' headquarters.

However, the record reflects that while, with one exception, the telephones at the headquarters of these three agencies are not manned around-the-clock, the Sheriff's office has the home phone numbers for at least one individual and an alternate employed in each agency. We conclude that this is an adequate arrangement. Moreover, while tone alert radios, which are required by the County Plan, will not be delivered until the spring and will not be installed until the early summer of 1984, this does not mean the emergency plans are defective. Emergency Planning is a continuous process and our findings are predictive. We are satisfied that, pursuant to 10 C.F.R. § 50.47(a), the emergency plans are sufficiently detailed and concrete to provide us with reasonable assurance that they can and will be implemented in the event of an emergency. In addition, the plans must be completed and there must be a full-scale exercise before the NRC Staff can authorize full-power operation per 10 C.F.R. Part 50, App. E, § F.1.b., and

10 C.F.R. § 50.47.⁴ Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), LBP-82-100, 16 NRC 1550, 1563 (1982), aff'd, ALAB-732, 17 NRC 1076 (1983).

Contention 1(i) alleges that the County Plan is deficient because it fails to specify whom the Fire Leader should notify when a Fire Chief at a particular fire department is unavailable. Such a specific identification is unnecessary and the contention is thus without merit. The standard "fire" notification procedure will be followed in the event of an emergency at Wolf Creek; i.e., the Fire Leader will dial the "fire number" for each fire department which will automatically ring the fire phones of the fire chiefs and their alternates (as well as other firemen) in the various towns. This procedure will be set forth in the County Plan Implementing Procedures.

The Staff is requested to confirm that the tone alert radios have been installed and that the standard "fire" notification procedure has been set forth in the County Plan Implementing Procedures.

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In many contentions discussed infra, it is similarly contended that the emergency plans are defective because, as of the time of the hearing, certain items had not been installed, certain lists and training materials had not been completed, certain personnel had not yet been selected or trained, and that certain items had not been prepositioned. We will not reiterate our discussion, supra. Instead, we will merely conclude, in substance, that, while the emergency plans were not finalized at the time of the hearing, they were sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a).

2. Coffey County Courthouse and EOC Communications (Fdgs. 6-9).

Contention 2(b) alleges that ten or twelve people will be required to man the telephones at the County Emergency Operation Center, but that none are available.

Intervenors argue that the County Plan is deficient in failing to identify those individuals at the Emergency Operations Center (EOC) who will answer telephone calls. They also argue that key personnel will be diverted from performing their emergency duties if required to answer the phones. There is no merit to these arguments. In addition to the eighteen or more key emergency response personnel at the EOC, there are the public information officer, some secretaries and other personnel to handle phone calls. Moreover, it is not anticipated that many phone calls will be made by the public because broadcasts at thirty-minute intervals will update information and will advise that the EOC should not be contacted. Further, most of the EOC telephone numbers will be unlisted and thus unavailable to the public. Finally, even though State and County emergency personnel will have the unlisted numbers, most of their communications will be made via two-way radios.

Contention 2(c) alleges that the telephone system of the County Courthouse and of the EOC is inadequate - i.e., more lines are needed in the event of an emergency.

Intervenors, narrowing the thrust of this contention, argue that the operating license should not be granted until a second telephone line is installed in the County Engineer's Office to accommodate

telephone calls from those individuals needing emergency transportation. This argument is without merit. In the first place, it is the County Shop that will receive such calls for assistance. Second, in addition to an existing line, the County has already planned to install a second telephone line for this purpose. Third, individuals seeking this assistance will be assured of contacting the County Shop because, upon dialing the emergency number, the two phones will ring. We are reasonably assured that this protective measure can and will be taken in the event of a radiological emergency. (See n.4, supra). The Staff is requested to confirm that this second telephone line has been installed.

3. Sheriff's Communications Equipment (Fdgs. 10-11).

Contention 3(a) asserts that the Sheriff needs radio equipment that will enable him to talk to the Wolf Creek Plant and to all of Coffey County.

Altering and/or narrowing the thrust of this contention, Intervenor urge that, although new radio equipment is to be installed, this capability did not exist at the time of the hearing, and thus that the operating license shou'd not be granted until this new equipment has been both installed and tested. The argument is without merit. The short of the matter is that this new equipment will be installed in the Spring of 1984, enabling the Sheriff to communicate directly with the Wolf Creek plant and to reach all of Coffey County. Further, emergency preparedness exercises to test this equipment are part of the operational inspection process and are not required for any initial

licensing decision. (10 C.F.R. § 50.47(a)(2)). Thus, while the plan was not finalized at the time of the hearing, it was sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra). The Staff is requested to confirm that the radio equipment for the Sheriff has been installed.

6. Emergency Response Command and Control (Fdgs. 12-14).

Contention 6(g) contends that staffing will be inadequate during an emergency evacuation because the Sheriff, who is responsible for directing and controlling evacuation from the Emergency Operations Center, will not be relieved by the Under Sheriff since he will be in the field taking care of various traffic control and security matters. Intervenors suggest that the County Plan be revised to provide that the Under Sheriff will assist the Sheriff during emergency evacuation and that the former should be assigned no conflicting duties.

This contention lacks merit. Since the maximum time for evacuating the plume exposure pathway Emergency Planning Zone (plume EPZ) is estimated at two and one-half hours, it is clear that a Sheriff would not need the relief as proposed by the Intervenors. There is nothing in the record suggesting either that the incumbent (or his successor) would need assistance in carrying out these duties or that a problem might arise if the Under Sheriff (or his successor), in the absence of the Sheriff, had to be called upon to be the Acting Sheriff.

8. Evacuation Time Estimates (Fdgs. 15-16).

Contention 8(c) alleges that the County Plan does not contain an estimated evacuation time for individuals who do not have their own automobiles for transportation.

Narrowing the thrust of this contention, Intervenors argue that the operating license should not be issued until the County Plan is amended to reflect that the estimated evacuation of 2.5 hours encompasses all classes of the special population that need transportation. The current County Plan, revised in September, 1983, in stating that the estimated time for evacuation of a nursing home and a hospital was 2.5 hours, did not specify that this estimate included the time for evacuating individuals needing transportation. Applicants agree that the Plan should be corrected to reflect that this estimate includes the evacuation time for all classes of the special population needing transportation. Since the Plan requires that the Emergency Preparedness Coordinator review it on at least an annual basis and requires that a certification that it is current be submitted to the County Commissioners, we see no justification from the standpoint of health and safety and have been given none for delaying the issuance of the operating license until September 1984. We are satisfied that the Plan will be so corrected.

9. Evacuation Routes (Fdgs. 17-22).

Contention 9(c) alleges that the County Plan is deficient because the evacuation routes send evacuees downwind. It also alleges that the

Plan needs to give adequate consideration to wind directions and to possible changes in wind direction during an evacuation.

Changing the thrust of this contention, Intervenors argue either that the County Plan is deficient because it does not predesignate alternate evacuation routes that might have to be used depending upon the wind condition at the time of the emergency or that it is deficient in failing to require that, in advance of an emergency, Emergency Broadcasting System (EBS) announcements be drafted designating alternate routes which might be necessitated by the wind direction at the time of the actual emergency. This contention, as revised, is without merit. We conclude that the Plan is adequate because it designates evacuation routes which were predetermined upon the basis of predominant wind directions at the Wolf Creek site. An emergency planning document should be as clear and as simple as possible - it should not be burdened down with "what if" details, especially when, as here, the predominant wind directions have been taken into account. Moreover, our conclusion that the Plan is adequate in this regard is predicated on FEMA's witnesses' testimony that none of the plans that they had worked upon previously had predesignated evacuation routes based upon differing wind conditions that might exist at the time of the evacuation. Finally, we conclude, as does FEMA, that it would be too cumbersome to draft EBS announcements predesignating the numerous alternate routes which might be necessitated by the wind direction at the time of the evacuation and

that it would be too time-consuming to make a selection from these numerous announcements at the time an emergency arises.

Contention 9(e) similarly contends that the County Plan is deficient in failing to predesignate alternate routes in the event the designated routes are closed because of weather conditions. This contention lacks merit. The fact of the matter is that, with few exceptions, all of the County roads are travelable year round. Further, because of the extensive road system in the County, it would be too difficult to predesignate alternate routes. Finally, such predesignation would be unnecessary because EBS announcements would inform the public to take an alternate route.

11. Public Alert and Notification System (Fdgs. 23-32).

Contention 11(a) alleges that the County Plan is deficient because under the Plan it is not possible to notify 100% of the population within five miles of the site within fifteen minutes and because it is not possible to assure 100% coverage within forty-five minutes for those who did not receive the initial notification and who are within the ten-mile emergency planning zone.

Altering and/or narrowing the thrust of this contention, Intervenor's first assert that, while three fixed sirens have adequate range to alert the three agencies having jurisdiction over the John Redmond Reservoir, (1) a small portion of land under the jurisdiction of one of the agencies, the U. S. Fish and Wildlife Service (F&WS), is not within that range, (2) the County Plan does not specify how visitors in

that small area will be warned, (3) such visitors could not be warned within 45 minutes, and (4) that to date tone alerts had not been installed in the F&WS Office. After reading the County Plan, we are satisfied that, in following the procedures set forth therein, the F&WS will be able to notify visitors in all areas under its jurisdiction (including the small area not within range of a siren) that they should evacuate. Further, in light of FEMA's conclusion that F&WS will be able to notify visitors in its jurisdictional area within 45 minutes, we have reasonable assurance that these protective measures can and will be taken within that time span in the event of radiological emergency. Finally, in our analysis of Contention 1(e), supra, we have already dealt with the argument that the County Plan is deficient because tone alert radios had not been installed as of the date of the hearing. In passing, we note that the County Plan provided for the installation of one siren to serve this area, but that Applicants have committed to install two additional ones. The Staff is requested to confirm that these additional sirens have been installed.

Second, Intervenors allege that a boater in the middle of the reservoir would be unable to hear the sirens and that such a person in a motorboat most certainly would not hear the sirens because of the engine noise. The record reflects that the ranges of the sirens do encompass the middle of the reservoir and the sirens can be heard, but that boaters do not venture into this area because of the shallow bottom. In any event, if a person in a motor boat did venture into this area, it is

reasonable to assume that, because of the shallow bottom, he would soon move on to areas where the sound levels from the sirens are greater and could be heard over the noise of the engine.

Third, intervenors allege that farmers working in their fields may not receive direct notification through sirens or tone alert radios. However, the County has arranged for the Emergency Broadcasting System announcements to remind people to go out into the fields to notify family members or friends who are farming and might not hear the sirens or the tone alert radios.

Fourth, intervenors allege that the County Plan is inadequate with respect to giving special warnings to the hearing-impaired who can be identified in advance. However, the Plan does contain provisions for individual alerting of persons who, because of deafness or other reasons, could not hear the sirens or tone alerts. Based on a County Survey, it is estimated that approximately 50 households may require such special notification, and, as stated in the County Plan and in testimony, the Fire Leader's personnel will individually alert 40 and the County Engineer's personnel will so alert 10 households. The County Engineer testified that the 10 households would be alerted within 45 minutes, and, by virtue of the numerous fire department personnel available to alert the remaining 40 households and because there is no evidence to the contrary, we conclude that the Fire Leader's personnel can likewise complete their mission within 45 minutes. Moreover, in implementation of the County Plan, a list identifying these

hearing-impaired persons will be prepared from the County survey, and will be updated by the County Health Nurse, by family members, and by the return of the attachment to the public information brochure which is mailed annually to the public. While the County Plan was not finalized at the time of the hearing, it was sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra).

Finally, it is of no moment that, at the time of the hearing, the County Plan did not contain letters of agreement committing the County's fire departments to make these special notifications. The Plan indicates that these letters will be inserted.

In light of the above analysis, we conclude Intervenors' allegations are without merit.

Contention 11(e) is concerned that the County Plan fails to provide for back-up warning procedures and personnel in the event a siren should fail to operate. However, the record reflects that the sirens will be frequently used, tested and maintained and thus the likelihood of siren failure in an emergency is reduced. The contention in any event is without merit. NUREG-0654 does not require that back-up procedures of this nature be set forth in emergency plans. We note that, should a siren fail to operate in an emergency, patrol cars and fire department vehicles would be sent to alert the affected public.

Contention 11(j) alleges that the County Plan does not provide for the testing and maintenance of the tone alerts. The contention clearly

is in error. The County Plan specifically states that tone alert radios are to be tested weekly by the Emergency Broadcast System; thus this provision exceeds a FEMA guideline which states that tests are desirable on at least a monthly basis. Moreover, brochures accompanying the tone alert radios notify the recipients that the tone alerts will be tested weekly and that replacements will be available from the County's Emergency Preparedness Coordinator.

12. Public Emergency Planning and Information (Fdgs. 33-36).

Contention 12(e) contends that there is no detail about how the educational information would be provided to transients. Instead of advertng to the alleged absence of detail in the County Plan with respect to methods or procedures whereby educational information would be provided to transients, the Intervenors now argue that the operating license should not be granted until the County Plan is amended to specify the exact location of informational signs at the John Redmond Reservoir and until the information on them has been developed and approved by FEMA. However, 10 C.F.R. § 50.47(b)(7) and NUREG-0654, Criterion G.2., merely require that signs should be utilized to disseminate information to transients; § 5.4 of the County Plan meets this requirement in stating that large public information billboards will be used to provide information for transients at the Redmond Reservoir. Thus, these arguments are without merit because the exact locations of the billboards and the wording which will appear on the billboards are not required by the regulations to be set forth in

emergency plans. The record does reflect that these billboards will be placed on access roads into the Reservoir and will instruct that, upon the activation of the sirens or other notification of an emergency, visitors should turn to identified EBS stations on their automobile radios. In addition, flyers will be left on the windshields of unattended cars at the Reservoir, which will include the basic information on the billboards plus a map showing the evacuation routes. While the County Plan does not specify the number of signs to be used or their exact locations on the access roads, these minor details are a proper subject for post-hearing resolution by the NRC Staff. Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1106 (1983).

Contention 12(s) alleges that the County Plan is deficient because, although the Public Information Officer will advise parents where their children have been evacuated to, this information should be furnished at an earlier time. The contention is in error. The County Plan does identify the host counties' registration centers for the schools being evacuated. Moreover, the public information brochure will advise parents which host county facility their children will be evacuated to in an emergency, and this same information will be repeated to parents at the time of an emergency via EBS announcements, which announcements are included in the County Plan.

13. Evacuation Of Pregnant Women And Small Children (Fdgs. 37-38).

Contention 13(b) asserts that the County Plan is deficient because it fails to provide transportation for pregnant women (without their own automobiles) and young children if it becomes necessary to evacuate them earlier than other persons. While the County Plan does not expressly provide for transportation in the early protective evacuation of pregnant women and small children, it is believed that there will be very few pregnant women or families with small children who will not have their own vehicles. With respect to those very few, they can secure transportation from the County Shop by phoning the numbers listed in the annually circulated public information brochure and announced in the emergency broadcasts. Further, if additional transportation is needed for protective evacuation during school hours, buses from one of the outlying school districts (outside the EPZ) would be utilized. We conclude that these protective evacuation procedures are adequate and need not be detailed in the County Plan.

14. Evacuation of Schools (Fdgs. 39-46).

Contention 14(a) alleges that sufficient training will not be provided to teachers, school administrators and children on "how to handle the evacuation." NUREG-0654, Criterion 0.1., states that "Each organization shall assure the training of appropriate individuals." FEMA has interpreted this guidance such that whether an individual is "appropriate" to receive training is dependent upon the function the individual assumes in an emergency.

Intervenors concede that school administrators will receive training but assert that the Plan does not provide for training teachers and children. As a part of their annual orientation, teachers will receive instruction pertaining to their roles in assisting the evacuation of children. At that time they will be given copies of the Wolf Creek emergency public information brochure. This will provide teachers with the same information provided to parents, including educational information on radiation. Although, the FEMA witness was in support of more extensive training for teachers, the Board relies upon the testimony of Applicants' witness, Dr. Mileti, a sociologist specializing in areas dealing with complex organizations, hazards, policy and methods. Dr. Mileti testified that because the functions of teachers during an evacuation do not entail any decision-making responsibilities or specialized knowledge, no extensive training is required for them. The responses by the FEMA witness, during cross-examination, in support of her opinion that teachers required more intensive training were not persuasive to the Board.

Students have no response role, but will merely be evacuated upon boarding the school buses or teachers' vehicles. Thus, they do not require any training. The FEMA witness knew of no nuclear emergency plan that includes provisions for evacuation training for school children. The Board is satisfied that school personnel will receive adequate training or instruction requisite to the performance of their emergency roles in assisting the evacuation of school children and that

special training for students is unnecessary to protect the children's health and safety during an evacuation.

Contention 14(b) alleges that there are not enough school buses available to evacuate school children. Intervenors have narrowed their concerns to the adequacy of bus capacity to evacuate the Burlington School District. They assert that sufficient transportation should be available to evacuate all of the Burlington students at the same time and that the County Plan should reflect the proposed procedures. The record indicates that public schools requiring evacuation could be evacuated in a single lift with the use of school buses and teachers' cars. If sufficient teacher cars were unavailable, Burlington school evacuation would be completed using the first buses arriving from surrounding schools. Intervenors have not indicated any infirmity in the Plan for the use of teacher cars or for the use of surrounding area buses if teacher cars were not available. Contrary to Intervenors' implication, FEMA does not require that letters of agreement commit the usage of teachers' cars. The Board finds reasonable assurance that the transportation procedures to evacuate the Burlington School District are adequate and that the County Plan need not be burdened with the details of the arrangements.

15. Evacuation of Health Care Facilities and Residents Needing Special Transportation Assistance (Fdgs. 47-56).

Contention 15(a) alleges that the County Plan does not detail what type of health services will be provided for persons who are in

institutions or under care on an outpatient basis prior to the accident, that it does not specify which hospital they will be taken to, and that it does not consider the number of patients to be cared for.

Intervenors have altered the thrust of the original contention as stated above. Rather than challenging the availability and adequacy of health services to be provided, Intervenors limit their concerns to the lack of signed agreements with hospitals about accepting patients from the Coffey County Hospital and the Golden Age Lodge Nursing Home and urge that the operating license not be issued until signed agreements are made a part of the plan and approved by FEMA.

Although signed agreements with health care institutions to accept patients from the Coffey County Hospital and the nursing home do not exist, there are verbal arrangements with institutions in surrounding counties which have always been honored in past emergencies. The record contains no affirmation that signed agreements will eventually be obtained. We note in this regard that NUREG-0654, Criteria A.3 states that "Each plan shall include written agreements referring to the concept of operation developed between Federal, State, and local agencies and other support organizations having an emergency response role within the Emergency Planning Zones." Also, FEMA has stated a requirement for signed letters of agreement with the hospitals identified to receive patients evacuated from Coffey County. Accordingly, the Board directs that such letters of agreement be obtained and included within the County Plan. (See Order, infra).

Contention 15(c) alleges that Coffey County does not have sufficient transportation (ambulances, buses, etc.) to evacuate people from nursing homes and the Coffey County Hospital.

Similar to Contention 15(a), supra, Intervenors have altered the thrust of Contention 15(c) to the lack of signed agreements with the suppliers of transportation for nonambulatory patients rather than on the sufficiency of vehicles to evacuate people from nursing homes and the Coffey County Hospital. Specifically, the Intervenors argue that there is no assurance that the ambulances and funeral directors' vehicles will be available unless that is detailed in a signed agreement. They further state that the operating license should not be issued until the signed agreements are included in the County Plan and that FEMA has verified the adequacy of the vehicles.

As we discussed in Contention 15(a), NUREG-0654, Criteria A.3 provides a requirement for written agreements with support organizations having an emergency response role within the Emergency Planning Zones. The Board finds in this instance that although sufficient (non-military) vehicles have been identified to evacuate nonambulatory patients from the plume EPZ, the arrangements described for these services are not in the form of specific written agreements. The Board directs therefore that written agreements be obtained for ambulances and funeral directors' vehicles and be included within the County Plan. (See Order, infra). Finally, we find no merit to Intervenors' request that FEMA verify the adequacy of the vehicles since the available ambulances are

more than adequate to transport nonambulatory patients and funeral directors' vehicles provide additional capacity. Guidelines for the use of funeral directors' vehicles for such emergency purposes have been developed by FEMA.

Contentions 15(n) and 15(o) allege that the County Health Nurse has not compiled a list of county residents who are shut-ins or who may need special evacuation assistance and that the County Plan does not make adequate provision for preparing a list of county residents who are shut in or who may need special evacuation assistance, and does not make adequate provision for updating the list as changes occur.

Intervenors' arguments have expanded the contention to include a requirement that the operating license should not be issued until the following conditions have been met: (1) the Plan is revised to show how the list will be prepared; (2) the list is prepared; (3) the hearing impaired are identified on the list; and (4) FEMA has verified that the list is up-to-date, and the Emergency Preparedness Coordinator has certified that the list is correct. We find no merit to the arguments.

Those persons requiring special emergency transportation or other special evacuation assistance are identified by the County Survey and by family members, in conjunction with the list of "home help" patients normally maintained by the County Health Nurse. The hearing impaired will be identified. The emergency public information brochure will also include a request for updated information on such individuals, and new residents of the plume EPZ will be contacted to determine whether they

would need special evacuation assistance. The list of individuals needing special assistance will be updated at least monthly, with an up-to-date list maintained both with the County Engineer and in the EOC.

Although all facets of the plan for preparing, maintaining, and updating the list of persons requiring special evacuation assistance have not been completed, they were sufficiently developed at the time of the hearing to permit us to make the "reasonable assurance" finding. (See n.4, supra).

16. Evacuation of Persons Without Private Transportation
(Fdgs. 57-63).

Contention 16(a) alleges that the County Plan does not detail how many individuals will need transportation assistance that the County Engineer is to provide for an evacuation and that there is inadequate detail about how the Engineer will know whom to evacuate.

Intervenors argue that the County Plan does not provide procedures for estimating and updating individuals requiring special transportation and that provisions are not adequate for people without transportation to call in and request assistance. Contrary to these allegations, the County Survey has indicated that approximately 120 individuals may require transportation assistance in an evacuation. A list of those needing transportation assistance is being developed, and will be maintained and updated in the same manner and on the same basis as the list on individuals needing special evacuation assistance. Those individuals needing transportation assistance may call the County Shop.

Thus, while the plan was not finalized at the time of hearing, it was sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra).

Contention 16(1) alleges that there are not enough vehicles available to provide transportation for those who do not have their own means of transportation.

Revising the thrust of their contention, Intervenors assert that if the individuals needing special transportation are to be evacuated in school buses within 2.5 hours, more vehicles will have to be assigned because the assigned number will not be available within the estimated time of 1.5 hours to begin the evacuation. The record reflects that an estimated 329 persons within the plume EPZ (other than public school students and other than those individuals whose vehicles, for example, are being repaired) will require school bus transportation, that school buses from the towns of Gridley, Lebo and Waverly, which are outside the EPZ, have a total capacity of 726, and that these buses could discharge their students at their homes and could be available within 1.5 hours to commence the evacuation from the EPZ of the 329 individuals. The Intervenors have not cited any probative evidence to the contrary, and accordingly we conclude that this contention is without merit.

Contention 16(m) alleges that the County Engineer has not arranged for school buses.

Intervenors assert that letters of agreement to utilize school buses are not in the County Plan, that there is no signed agreement with

the Burlington School District, and that some of the agreements may not include the private companies which own some of the buses.

Contrary to the allegations, arrangements for school buses have been made, including letters of agreement which have been or will be signed with school districts. We find no merit in Intervenors' complaint that one of the letters is still to be signed and that the letters are not as yet in the County Plan. Furthermore, no evidence has been adduced which would cause us to doubt the validity of the agreements with the school districts that contract with private companies.

Contention 16(n) alleges that the County Plan is deficient because school buses will be required for evacuation of school children and will not be available to provide the emergency transportation. Contrary to this contention, school buses will be available for emergency use after transporting their children out of the plume EPZ or to their home. Intervenors further allege that people waiting for buses to return to the EPZ for evacuation could be exposed to radiation. However, testimony has shown that if an evacuation could not be accomplished prior to the release of radiation, sheltering would be the selected protective action. Furthermore, we find no substance to the complaint that not all individuals are evacuated simultaneously. Rather, we rely on the testimony which has shown that evacuation can be accomplished within the evacuation time estimate of 2½ hours regardless of the order in which groups are evacuated.

18. Traffic Control, Access Control, and EPZ Security
(Fdgs. 64-70).

Contention 18(a) alleges that the County Plan does not provide for enough traffic control, and that there is too little traffic control provision within the ten-mile EPZ.

Intervenors challenge the adequacy of provisions for traffic control in an evacuation, alleging particularly a need for traffic control in Burlington and in the vicinity of Redmond Reservoir. However, the Sheriff's uncontradicted testimony indicates that traffic control for Burlington and the vicinity of John Redmond is unnecessary. Intervenors also contend that additional traffic control is needed to keep drivers on evacuation routes. Area residents, however, can be expected to be familiar with the local road network, and therefore can be expected to select the most direct route out of the EPZ. With respect to Reservoir visitors who may be unfamiliar with the County roads, the key determinant of the route they use to exit the EPZ will be the information provided in the EBS announcements. FEMA will review the EBS announcements to ensure that they provide sufficient clear information for Redmond Reservoir visitors. The Board is satisfied that adequate traffic control is provided for the sparsely populated EPZ during an emergency evacuation.

Contention 18(r) alleges that the County Plan is deficient because it does not provide that the entire evacuated area will be blocked. It only contemplates that it will be blocked as resources become available.

Intervenors concede that all roads into the EPZ will be barricaded. However, they argue that the operating license be withheld until the plan is amended to reflect the fact that the National Guard or other workers will man the secondary roadblocks. Given the County Emergency Preparedness Coordinator's responsibility to evaluate annually the plan and certify its accuracy to the County Commissioners, (see Opinion, supra, re Contention 8(c)), we conclude that it can be reasonably expected that the County Plan will be amended to reflect the National Guard's manning of secondary roadblocks.

Contention 18(aa) alleges that the Sheriff does not have enough personnel to secure the evacuated area on a 24-hour per day basis.

Intervenors present no arguments that challenge the sufficiency of staffing to secure the presently configured 10-mile radius plume EPZ. They do, however, argue that the access points may have to be moved back if contamination reaches a high enough level, resulting in an expansion of the plume EPZ and requirement for additional security personnel. Not only does their argument go beyond the scope of the contention but it also represents a challenge to the Commission's emergency planning regulations, which require only that a license applicant demonstrate the ability to implement protective actions for an EPZ of approximately 10

miles in radius.⁵ (See 10 C.F.R. § 50.47(c)(2); 10 C.F.R. Part 50, App. E n.2).

We conclude that there is reasonable assurance that emergency planning provides for adequate traffic control during an evacuation, sufficient access control to the evacuated area, and that the area will be adequately secured after it has been evacuated. We find no merit in Intervenor's arguments to the contrary.

19. Radiation Monitoring and Decontamination (Fdgs. 71-84).

a. Staffing

Contention 19(e) alleges that there is no person designated or trained to act for the Radiological Defense Officer (RDO) if he is not available or is to be relieved during an accident.

An alternate Radiological Defense Officer has been selected and will receive the standard FEMA training course. Intervenor's assertion that the County Plan does not designate by title the alternate RDO nor that the alternate is properly trained is without merit. Although the alternate RDO had not received his training at the time of hearing, the plan to train him was sufficiently developed to permit us to make the "reasonable assurance" finding. (See n.4 supra).

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In developing the regulations on the size of the plume EPZ, "[t]he NRC/EPA Task Force concluded that it would be unlikely that any protective actions for the plume exposure pathway would be required beyond the [about 10 miles radius] plume exposure EPZ." The Task Force further recognized that, in any event, "detailed

(Footnote Continued)

Contentions 19(h) and 19(i) allege that the County Radiation Monitoring Team has not been selected and that the County Plan is deficient because it does not state how many members of the Radiological Monitoring Team will be required, and does not contemplate enough people to handle the duties of the Radiological Monitoring Team.

Intervenors assert that the operating license should not issue until the County Plan is revised to list the members of the County Radiological Monitoring Team by name and assignment. However, testimony shows that Coffey County currently has about 48 people who have had the FEMA Radiological Monitoring training course and eight hours of classroom training in the use of radiation monitoring instruments. The County plans to train an additional 25 people. Of this group, 21 will be selected for additional training, to qualify as members of the Joint Radiation Monitoring teams. Identification and assignment of this group will be made prior to the full-scale exercise. Contrary to Intervenors' representation, FEMA did not testify that the roster of team members, with assignments, need be included in the plan. Rather, FEMA testified that such a roster could be included in the implementing procedures. Although the members of the Joint Radiation Monitoring Team have not as

(Footnote Continued)

planning within 10 miles would provide a substantial base for expansion of response efforts in the event that this proved necessary." (NUREG-0654, at 12).

yet been selected nor fully trained, we have "reasonable assurance" that this will be done prior to the full-scale exercise. (See n.4, supra).

Contention 19(k) alleges (1) that Coffey County will not be able to perform decontamination and radiation checks within the County and at evacuation centers, because it is not adequately staffed, and (2) that there is no provision in the County Plan for an adequate number of personnel to supplement the County Radiation Monitoring Team in order to check evacuees and vehicles at shelters for contamination.

Intervenors assert that plant operation should not be authorized until it is shown that enough monitors (including relief monitors) will be available in the host counties to provide the monitoring for the evacuees and their vehicles, that the plan should provide that there will be additional monitors for rechecking evacuees after decontamination and for checking vehicles for contamination and after decontamination, and that women should be checked for contamination by women monitors. In calculating the number of monitors needed (49), Intervenors have used a theoretical maximum for the number of evacuees to be monitored in the host counties. The Board finds that the expected number of evacuees (as utilized by FEMA) rather than the theoretical maximum is appropriate for determination of the number of monitors needed and that 26 host county radiation monitoring personnel will be sufficient.

Intervenors provide no evidentiary support for their position that provision should be made for additional monitors for rechecking evacuees after decontamination and for checking vehicles. Also, NUREG-0654 does not specify any period of time within which vehicles must be monitored and decontaminated. This can be accomplished after monitoring and decontamination of evacuees has been completed and therefore does not require any additional monitors.

Intervenors further urge that the Board require the training of additional monitors to "provide relief for the monitors that start the process." However, Intervenors failed to elicit any evidence to support their assumption that the monitoring and decontamination process will continue so long that "relief" monitors will be necessary. Moreover, the figure of 26 host county monitors is itself conservative since it is unlikely that all persons in all directions within a 10-mile radius of the plant would be potentially exposed, and thus require monitoring. In addition, if necessary, additional monitoring personnel are available from the Kansas Department of Transportation, or the RDO could dispatch reserve Coffey County radiation monitoring personnel to relieve host County personnel.

Finally, Intervenors urge the Board to require that provisions be made for women evacuees to be checked for contamination by women monitors. However, there is no regulatory basis for such a requirement, and we conclude that the subject need not be addressed in either the plan or procedures.

Contention 19(1) alleges that the Fire Leader does not have enough personnel to conduct the decontamination activities.

Intervenors have altered the thrust of this contention whereby they assert that the operating license should not be issued until the agreements with the fire departments are modified to guarantee that workers will be made available at access control points and until the modified agreements are made part of the Plan. The apparent source of Intervenors' concern is the language of the letters of agreement indicating that the fire departments will provide equipment and workers that can be "mustered." There is no evidence in this proceeding to support Intervenors' suggestion that insufficient numbers of fire personnel might "muster." The five fire departments have 110 personnel and about 24 vehicles to man up to six access control positions. There is obviously more than enough personnel and equipment to respond to the six access control positions. Thus, based on the above, we conclude that there is no need to modify the letters of agreement as Intervenors suggest. There is also no need to order that letters of agreement be included in the County Plan since the plan indicates on its face that they will be included.

a. Availability of Equipment

Contention 19(r) alleges that the Coffey County Radiation Monitoring Team does not have proper radiation monitoring equipment to monitor radiation in the event of an evacuation. Intervenors narrowed their concern to air sampling equipment. They maintain that the

operating license should not issue until air sampling equipment is available and the plan has been revised to describe the equipment. It is undisputed that seven air samplers will be provided by KG&E and are now on order. The State Plan will describe this new equipment when it becomes available prior to the full-scale exercise. While the emergency plans were not finalized at the time of the hearing, they were sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4 supra).

Contention 19(aa) alleges that the Coffey County Radiation Monitoring Team does not have the communications equipment it needs to keep in touch with the County Emergency Operations Center and others. Intervenors have limited their concerns on this issue to an assertion that the Joint Radiation Monitoring teams should be in direct radio contact via portable radios with the County EOC. They further assert that the operating license should not be issued until the plan is revised to show this change and until the radios are available. Intervenors have adduced no affirmative evidence to indicate why direct contact should be with the County EOC. To the contrary, the EOF serves as the base of operations for the Joint Radiation Monitoring teams. Pertinent information is supplied to the EOC by the EOF via radio and/or telephone. There is no requirement that there be direct communication between the EOC and the teams. The contention is without merit.

c. Monitoring/Decontamination Procedures

Contention 19(hh) alleges that although the State Plan does not assume all evacuees will be checked for contamination, the Coffey County Plan does so and is deficient because it does not require that all evacuees go to the designated shelter area outside the evacuation zone for a contamination check. Intervenors assert that the emergency public information brochure and the EBS announcements must indicate that all evacuees are to go to registration centers to be checked for contamination. The EBS announcements will instruct all evacuees to proceed to registration centers and will, in addition, be expanded to explain the nature of the hazard occasioned by radiation and the availability and efficacy of contamination checks. This additional information will provide assurance that the public will avail itself of radiation monitoring services at registration centers. Similar information will be incorporated into the public information brochure. Thus, the contention, as modified, is without merit.

Contention 19(kk) alleges that the County Plan is deficient because it does not provide for disposal of contaminated equipment, vehicles, decontaminated water, or any other materials that might be contaminated.

Intervenors assert that the operating license should not be issued until provisions are made for the disposal of radioactive wastes at other sites, and that letters of agreement with those sites must be incorporated into the plan. In addition, Intervenors assert that the County should obtain letters of agreement with the host counties

indicating that they will permit the disposal of contaminated water through their waste systems.

The record evidences that, if KG&E could not process the contaminated materials itself, it could either contact another utility and process the material at that location, or it could contract with a local vendor specializing in decontamination services, and arrange for the use of a portable decontamination unit. There was no direct or cross-examination to establish, and thus there is no evidence in the record, that the plant site would be inaccessible for the decontamination of these materials. Letters of agreement with commercial enterprises are unnecessary.

Intervenors failed to elicit on the record any foundation in fact for their apparent assumption that letters of agreement with the host counties are necessary for the disposal of contaminated water, nor is there any indication that the host counties would object to the disposal of such water. The State does not believe that the water would present a public health and safety problem but to provide assurance to the host counties, the State plans to monitor the disposal of this water in the host counties. Thus, the record here is devoid of support for the letters of agreement Intervenors would require.

20. Shelter Facilities and Services (Fdgs. 85-93).

Contention 20(d) alleges that no people are available to provide management at the evacuation centers, and that 180 people are required for this purpose.

The record reflects that an estimated 97 school personnel or service club members will be required to handle registration in the host counties. While the Intervenor do not dispute this number directly, they contend that it has not been confirmed by FEMA, and that the workers are not available because they have not been named and there are no letters of agreement with the organizations providing them. Although FEMA has not confirmed the number of registration workers required, there is no evidence that the stated number is insufficient. If more registration help should be desired, the record shows that assistance could be provided by evacuees themselves.

With respect to the Intervenor's argument that letters of agreement must be executed, the Coffey County Shelter Systems Officer believes that school personnel can be relied upon in the absence of written agreement, and a FEMA witness confirms that letters of agreement with schools are unnecessary for registration workers. Further, the Crisis Relocation Plan for three of the four host counties already provides for the use of school personnel for registration services. Lyon County, which relies upon service club members for registration, has verbal agreements with the service clubs, which have been honored in the past. In light of the above, we are reasonably assured that the requisite number of registration workers will be available and we conclude that it is of no moment that the school personnel and service club members have not been named.

Intervenors, further, propose a finding that there are no written agreements with agencies and organizations that are to provide workers to assist in the management of the shelters in host counties. This is admissible under the contention, only if there is a very liberal interpretation of "evacuation centers," i.e., to imply more than "registration centers." Nevertheless, we consider it as follows. A FEMA witness expressed the opinion that guidelines of NUREG-0654, Criterion A.3 apply to support organizations but do not apply to either service organizations or to volunteers who would man shelter facilities. We concur.

In their brief, Intervenors go beyond any of their proposed findings in arguing that there is no evidence showing that there are adequate numbers of workers who have been recruited and trained to provide sheltering and feeding in the host counties, in arguing that there is no evidence showing that registration workers have been trained, and in contending that written agreements should be executed with those agencies providing food services. We do not consider these unsupported arguments.

Accordingly, we find reasonable assurance that registration centers will be staffed adequately in the event of evacuation.

Contentions 20(k) and 20 (m) allege that the County Plan does not provide details showing that the shelter centers have adequate facilities to provide for the sleeping, feeding, medical, sanitation, communication, and religious needs of evacuees, and that there is no

provision to pay shelter owners for their sites or services. Changing the thrust of these contentions, the Intervenors now claim that there should be signed agreements for the use of registration centers, shelters and food services, and that these agreements are required by NUREG-0654.

The need for written agreements to provide for facilities and services is not supported by FEMA experience and local experience. We were particularly impressed by Applicants' expert witness, Dr. Mileti, who testified that he was unaware of any case where shelter and food had been denied during emergencies because written agreements had been lacking.

There are verbal agreements for the use of identified shelter facilities that are not licensed federally. The Coffey County Shelter Systems Officer believes that these agreements are binding. Similarly, the Emergency Preparedness Coordinators for the four host counties are confident that they have binding verbal agreements with potential food suppliers. FEMA agrees that written agreements are unnecessary. We do not discuss Intervenors' claim with respect to registration centers which improperly ranges beyond the scope of these contentions.

Contrary to these contentions as revised, we conclude that written agreements for the use of shelters and food services are unnecessary.

25. County EOC Evacuation (Fdgs. 94-96).

Contention 25(a) alleges that the County Plan is deficient because it does not provide for relocation of the EOC if evacuation should

become necessary because of unacceptable radiation levels. The Intervenor enlarges the thrust of this contention in alleging that the County Plan is deficient because it does not contain a written agreement reflecting that Lyon County has agreed to permit the use of its EOC as an alternate, and in alleging that there is no provision for evacuation of the Coffey County EOC and of the Sheriff's office which might be necessitated in the event of a fire.

The contention, as expanded, is without merit. Neither NUREG-0654 nor any other regulation requires that an emergency plan provide for a backup EOC, and thus there is no legal basis to support the argument that the relocation agreement with Lyon County should be in written form. Moreover, we see no necessity for such a provision. The present County EOC has, and the new one will have, an adequate "protection factor." If radiation levels were to exceed that "protection level," there would be no need for the EOC to continue operating since the public in the plume exposure pathway EPZ would have been evacuated by that time. In the event relocation became necessary (for example, in the event of a fire rendering the EOC and the Sheriff's office inoperable), Coffey County's EOC personnel could perform their duties from radio-equipped vehicles, or could utilize the Lyon County EOC which Coffey County considers as having adequate facilities, or could use the State of Kansas' EOC.

28. Dose Control for Emergency Workers (Fdgs. 97-102).

Contentions 28(a), (b), (d), and (e) assert (1) that the County Plan does not specify that dosimeters will be issued to County emergency workers, and does not specify how many dosimeters will be needed and the kind that will be used, (2) that the number of dosimeters to be furnished to workers is inadequate, and (3) the County Radiological Defense Officer has not developed a system for controlling radiological exposure of emergency workers.

While now agreeing that each of the 225 Coffey County emergency workers will be issued a self-reading dosimeter and a thermoluminescent dosimeter and thus not challenging either the availability or the adequacy of the numbers of dosimeters to be furnished, the Intervenors urge that the County Plan should be amended to reflect a breakdown, by class and by number, of the County workers who will be furnished with dosimeters. FEMA concurs that either the County Plan or its Implementing Procedures should be so amended. Rather than further enlarge the Plan, which NUREG-0654 at page 29 states should be as concise as possible, we request that the Staff confirm that the Implementing Procedures have been so amended to reflect this information.

The Intervenors also urge that the Coffey County Plan be amended to specify where the dosimeters will be prepositioned or where the County workers in each class will be able to pick up their dosimeters. FEMA concurs to the extent that it states that the Implementing Procedures,

rather than the Plan itself, should be amended to specify the prepositioned locations, and the number and type of dosimeters to be furnished to the workers. The Staff is requested to confirm that the Implementing Procedures have been amended to specify where the dosimeters will be prepositioned or where the County Workers in each class will be able to secure their dosimeters, and the number and types of such dosimeters.

There is no support in the record for the Intervenor's concern that the twenty-six individuals, who will carry out radiation monitoring and decontamination for the four host counties at the registration centers, will not have dosimeters. In the aggregate, the host counties have 1056 self-reading dosimeters. However, while the record reflects that Kansas Fish and Game Commission personnel will have prepositioned dosimetry furnished by the State of Kansas and that the Applicants have committed to furnish dosimetry to personnel of the U. S. Fish and Wildlife Service for prepositioning, there is nothing in the record indicating that the U. S. Army Corps of Engineers will have dosimetry. Since the Corps of Engineers is obviously a federal military agency, we have no concern that it does not know how many dosimeters it will require or that it will not make its own arrangements for prepositioning; however, the Staff is requested to confirm either that the Corps will provide its own dosimeters or that KG&E will provide them. We see no reason to overburden either the County Plan or its Implementing Procedures to provide for the matters encompassed in this paragraph. Each of these

jurisdictions has the responsibility to establish procedures for their workers to follow in measuring and recording radiation levels.

Finally, while the record reflects that, after furnishing Coffey County with 250 thermoluminescent dosimeters, KG&E will have a reserve of 5750 TLDs at the plant site, the Intervenors argue that any replacements needed thereafter by the County might not be accessible if the radiation levels at the plant precluded access and thus that the County Plan should specify a different storage site. However, in the event of a high level of radiation at the site, there would be adequate time to secure replacements from neighboring nuclear plants or from commercial sources, or the Applicants could devise some method to transport the replacements away from the site.

29. Training (Fdgs. 103-123).

Contention 29(c) states that training programs needed to implement the County Plan and to familiarize County personnel with their emergency responsibilities have not been developed by the Coffey County Emergency Preparedness Coordinator.

In their proposed findings, Intervenors limit this contention to a complaint that the course content of the Joint Training Program is not fully developed at this time. They further allege that the initial training of emergency response workers cannot be done until the training program is completed and that the operating license should not be issued until the details of the program have been completed and adopted by the County.

The record shows that initial training under the Joint Training Program will be completed prior to the full-scale exercise, which satisfies FEMA requirements. Consequently, while the Joint Training Program was not fully developed at the time of the hearing, it was sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4 supra).

Contention 29(g) alleges that the County Plan should specify in detail the type and amount of training that individuals listed on a Table in the Plan should receive.

The Intervenors have altered the thrust of this contention. They argue that the operating license should not be issued until the revisions on the type and amount of training to be provided, as described during the hearing, appear within the County Plan, that workers at John Redmond Reservoir be listed within the training matrix, and that the Plan be revised to include certain host county officials.

FEMA is satisfied with the revisions to the County Plan describing the Joint Training Program as recommended by the Emergency Preparedness Coordinator and the Manager, Radiological Environmental Assessment, KG&E. Given the County Emergency Preparedness Coordinator's responsibility to evaluate annually the Plan and certify its accuracy to the County Commissioners, (see Opinion, supra, re Contention 8(c)), we have reasonable assurance that these revisions will appear in the emergency plans for Wolf Creek. The Staff is requested to confirm that

the County Plan and Implementing Procedures appropriately reflect these revisions.

With respect to Intervenors' second argument, although training of John Redmond Reservoir workers does not appear within the training matrix of the County Plan (they are not County workers), the training modules that they will receive have been specified on the record.

Finally, Intervenors assert that the County Plan must make provision for training for county commissioners, sheriffs, and emergency preparedness coordinators of the host counties. We note that neither this nor any other of Intervenors' contentions questions the training of these host county officials and that these officials are not listed in Table 5-1 of the County Plan. Intervenors have exceeded the scope of Contention 29(g) and we therefore do not consider these arguments.

Contention 29(h) states that County personnel in a lengthy list lack sufficient training to perform emergency functions.

Intervenors have narrowed the scope of this contention. Rather than questioning the sufficiency of training including certain specific areas which the contention alleges should be included within the training program for county emergency response personnel, Intervenors now assert merely that these workers have not yet been trained. Additionally, they complain that the Joint Radiation Monitoring Team has not been selected and together with other radiation monitors have not yet received training.

Contrary to Intervenor's objection that training is not yet complete, including special training of Joint Radiation Monitoring team members, FEMA is satisfied with the plan to complete all initial training that is appropriate before the full-scale exercise. The special training for Joint Radiation Monitoring teams has been described.

While training of County emergency workers was not completed at the time of the hearing, training plans were developed sufficiently to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4 supra).

Contention 29(k) alleges that the training program does not adequately address changes in emergency personnel.

The Intervenor's argue that the details of the retraining program are not developed and do not appear in the County Plan, that materials for training new people are not in the Plan and that replacement workers need comparable training to those they replace. Again, there is neither a requirement that detail of this sort appear in the County Plan nor that training plans (including retraining) be complete at this time. The general plans for retraining and training new personnel have been described to the satisfaction of FEMA. Training of replacement workers will be comparable to that of the workers replaced.

Thus, while the plans for retraining and training of new personnel were not finalized at the time of hearing, they were sufficiently

developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra).

Contention 29(q) alleges that the State plans for training its personnel with emergency responsibilities are inadequate, particularly with respect to radiological emergency response training.

The scope of this contention has been narrowed to the subject of proposed revisions to Table 0-1 of the State Plan. This Table shows the training matrix for emergency response workers. Intervenor's argue that the operating license should not be issued until the revisions indicated by Applicants' witness have been made to the Table. Similar to the County, the State also reviews and updates its plan annually. The Board, therefore, is reasonably assured that the proposed changes will be incorporated in Table 0-1 of the State Plan.

Contention 29(s) alleges that listed State personnel lack sufficient training to perform emergency functions.

Intervenor's argue that State workers have not yet been trained in all of the appropriate categories listed under Table 0-1 of the State Plan. Again, they wish to go beyond FEMA requirements in claiming that training of State emergency workers should be completed before the operating license is issued. They fail to recognize the significance of the commitment to complete initial training under the Joint Training Program prior to the full-scale exercise. Based on this commitment, we find that the plans for training State personnel were sufficiently

developed at the time of hearing to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra).

Contention 29(u) states that federal personnel at the John Redmond Reservoir lack sufficient training to perform their emergency functions.

The Intervenor's claim that personnel of the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service who are assigned to the John Redmond Reservoir have not received training under the Joint Training Program and therefore the operating license should not be issued until those personnel have received the training prescribed for them in Table 5-1 of the County Plan. The record shows that their training will be completed before the full-scale exercise. Consistent with Intervenor's further desire, these personnel will receive the same training as Kansas Fish and Game personnel with the exception of training in radiation survey techniques.

Although training of federal personnel at the John Redmond Reservoir was not completed at the time of the hearing, plans for such training are sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra).

31. Resource Availability and Allocation (Fdgs. 124-128).

Contentions 31(c) and 31(d) allege that Coffey County fire departments and vehicles of the Road Department do not have adequate radio equipment for communication with the Sheriff's Office.

The Intervenor's do not dispute that a new radio system on order will provide the fire departments and Road Department with adequate

communication to the Sheriff in his office or in the EOC, but claim that the equipment should be installed before the operating license is issued. The argument is without merit. Items for the new communication system are on order with delivery scheduled for spring 1984, which is before the full-scale exercise.

Thus, the plans for installing adequate radio communication equipment were sufficiently developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra). The Staff is requested to confirm that the radio equipment has been installed.

Contention 31(f) alleges that "protection gear against radiation" is needed by all workers involved in the evacuation plan.

Intervenors restrict their arguments to the need for protective clothing for the field radiation monitoring teams. They claim that the operating license should not be issued until the plan is revised to show the availability of protective clothing to the field monitoring teams, that the clothing will be stored other than at the plant site, and that the clothing will be prepositioned and available for use.

The contention is without merit. It has been clearly demonstrated that KG&E has 100 sets of protective clothing available for emergency workers and an additional 1900 sets if the need arises. Since NUREG-0654 requires only that protective clothing and provisions for its use be available onsite, Intervenors' arguments for prepositioning clothing at offsite locations are rejected. Finally, Intervenors assert

that protective clothing stored at the plant site may not be available due to "the nature of the accident at the plant," and therefore should be stored offsite. However, there was no direct or cross-examination to establish, and thus there is no evidence in the record to establish, that an accident at the plant might preclude securing the protective clothing. We conclude that the plans for supplying protective clothing to field monitoring teams in case of a radiological emergency at Wolf Creek are sufficiently well developed to permit us to make the "reasonable assurance" finding pursuant to 10 C.F.R. § 50.47(a). (See n.4, supra).

IV CONCLUSION

The Board concludes that the emergency plans subject to the conditions set forth in the Order, infra, comply with 10 C.F.R. § 50.47, with Appendix E to 10 C.F.R. Part 50, and with the criteria in NUREG-0654.

FINDINGS OF FACT⁶

1. Initial Notification and Official Communications.

Contention 1(e). The County Plan does not make adequate provision for how the Sheriff will notify the U. S. Army Corps of Engineers, U. S. Fish and Wildlife Service, and the Kansas Fish and Game Commission when the warning function is activated. The evacuation time will therefore be longer than estimated.

1. 10 C.F.R. § 50.47(b)(6) requires that offsite emergency plans provide for prompt communication among principal response organizations to emergency personnel. Criterion F.1.a. of NUREG-0654 states that such plans should provide for backup means of communication by these organizations and should provide for 24-hour per day manning of communications links by the emergency personnel.

2. The Coffey County Contingency Plan for Incidents Involving Commercial Nuclear Power specifies by title those individuals and organizations that the Sheriff's office is responsible for notifying. Amongst these organizations are the three agencies named in this contention. (Appls.' Ex. 1, Table 3-1; Appls.' Test., fol. Tr. 194, at 2). The County Plan Implementing Procedures include call lists which provide for both primary and alternate contacts. (Appls.' Ex. 5). FEMA

⁶

The factual background of the case is set forth in the Introduction to our Opinion, supra. Further, as stated in n.3 above, since the Intervenor's have narrowed various aspects or changed the thrusts of many of these contentions, the Board's findings are addressed only to the contentions as so revised.

will review the call lists prior to the full-scale exercise to ensure that the names of the individuals to be called and their phone numbers have been inserted. (Tr. 1738-40, 1752-53, 1760). Moreover, while only the Corps of Engineers has someone manning its telephones 24 hours a day during the summer months, the Sheriff's office has also the home phone numbers for at least one individual and an alternate employed in each of these agencies. (Tr. 940, 1150).

3. During business hours, the Sheriff's dispatcher will communicate with these three agencies by telephone, and, if unsuccessful in contacting them, will resort to backup radio communication. These agencies already have two-way sheriff's frequency radios, and, pursuant to the County Plan, will be provided also with commercial grade tone alert radios. (Appls.' Ex. 1, § 3.2; Tr. 939, 1149). While the tone alert radios had not yet been installed at the time of the hearing, they were scheduled for delivery in the spring and for installation in the early summer of 1984. (Tr. 938-40, 942, 1149-50). FEMA concludes that this is adequate, reliable primary and backup communication. (FEMA Test., fol. Tr. 1731, at 6; Tr. 1741-42).

Contention 1(i). The County Plan does not specify whom the Fire Leader is to notify if a fire chief is not available.

4. Criterion E. 2. of NUREG-0654 provides that each response organization should establish procedures for alerting and notifying emergency response personnel.

5. The County Plan provides that in an emergency, the Fire Leader will notify all Fire Chiefs in the County. In the event of fires, each

town has a fire phone number - when that fire number is dialed, automatically telephones (varying in number from town to town) will ring in the homes and businesses of the principal firemen and their alternates. The County Sheriff confirmed that this procedure would be followed in the event of an emergency at Wolf Creek in that the Fire Leader will call the "fire number" for each fire department which will automatically ring the fire phones of the fire chiefs and alternates (as well as other firemen) in the various towns. This procedure will be set forth in County Plan Implementing Procedures. (Appls.' Test., fol. Tr. 194, at 7; Tr. 942-44, 1229-30).

2. Coffey County Courthouse and EOC Communications.

Contention 2(b). Ten or twelve additional people will be required to handle telephone calls at the Coffey County Emergency Operations Center. None of these people are available.

6. Criterion A. of NUREG-0654 and 10 C.F.R. 50.47(b)(1) provide that each principal response organization should have staff to respond and to augment its initial response on a continuous basis.

7. There will be at least 18 county emergency response personnel (plus federal and state personnel) in key positions available to answer telephone calls at the Coffey County EOC. (Appls.' Test., fol. Tr. 194, at 11; Tr. 946; FEMA Test. fol. Tr. 1731, at 13). The public information officer, some secretaries and other personnel would also be available to handle phone calls. The County Plan will not specifically designate those individuals who will man the phones. However, the Emergency Broadcast System (EBS), broadcasting at 30-minute intervals,

will not only keep the public updated but will advise the public not to call the EOC. Moreover, since most of the telephone numbers in the EOC will be unlisted, it is unlikely that members of the public will be able to contact key county personnel. Finally, while State personnel, monitoring teams, response teams and emergency workers will have the unlisted numbers, most of these communications will be via two-way radios. (Tr. 945-48).

Contention 2(c). The telephone system will not be adequate. There will not be enough lines in the event of an emergency.

8. Criterion J. 10.g. of NUREG-0654 states that plans to implement protective measures for the plume exposure pathway should include means of relocation.

9. Currently, there is one telephone line in the county shop for normal, everyday calls. A second line is to be added to receive calls from persons needing emergency transportation. In the event of an emergency, individuals needing emergency transportation can secure the emergency phone number from the public information brochure, which is circulated yearly, and from emergency broadcasts; when that emergency number is called, the two phones, manned by two shop personnel, will ring. (Tr. 733, 759; Appls.' Test., fol. Tr. 194, at 83; Tr. 1145-46; Tr. 1286).

3. Sheriff's Communications Equipment.

Contention 3(a). The Sheriff needs radio equipment that will permit him to talk to the Wolf Creek Plant and all of Coffey County.

10. Criterion F.1.d. of NUREG-0654 states that communication plans shall provide for communications between the nuclear facility and the local emergency operations center.

11. New radio equipment will be installed in the Spring of 1984 which will enable the Sheriff to talk directly to the Wolf Creek plant and to reach all of Coffey County. The County Plan provides for such direct radio coverage. (Appls.' Test. fol. Tr. 194, at 13; Tr. 644-46, 678-81; FEMA Test., fol. Tr. 1731, at 15; Tr. 1773; Appls.' Ex. 1, sec. 4.2.3).

6. Emergency Response Command and Control.

Contention 6(g). Due to insufficient staffing, Coffey County cannot adequately direct the evacuation. Although 2 personnel are required to perform this function, only the Sheriff is presently available.

12. See finding 6, supra.

13. The County Plan assigns responsibility to the Sheriff to direct and control evacuation. (Appls.' Ex. 1, p. 1-16). The Sheriff testified that he, acting alone, can direct the evacuation and that, in the event of his absence for some reason, his Under Sheriff would be available to take over his duties in the Emergency Operations Center. While the Sheriff is present and carrying out his duties in the EOC, the Under Sheriff would be in the field taking care of traffic and security matters and would not be utilized to relieve the Sheriff. (Appls.' Test., fol. Tr. 194, at 20; Tr. 647-50).

14. The County Plan estimates that the plume exposure pathway Emergency Planning Zone (plume EPZ) can be evacuated within two and one-half hours. (Appls.' Ex. 1, p. 3-5).

8. Evacuation Time Estimates.

Contention 8(c). The County Plan does not provide an estimated evacuation time for individuals who do not have their own private automobiles for transportation. There is no estimate of evacuation time for them.

15. The current version of the County Plan, revised in September, 1983, reflects that "For the non-ambulatory occupants of the Golden Age Lodge and the Coffey County Hospital, an evacuation time of 2.5 hours is estimated using area resources. . . ." (Appls.' Ex. 1, p. K-19). This estimate of 2.5 hours included the time for evacuating those individuals who lack transportation. The County Plan should be corrected to reflect that this estimate includes the evacuation time for all classes of the special population needing transportation. (Appls.' Test., fol. Tr. 194, at 34; Tr. 1675-77, 1703, 1706-07).

16. The County Plan requires that, at least once a year, the Emergency Preparedness Coordinator review the Plan and certify to the County Commissioners that it is current. (Appls.' Ex. 1, § 5.3).

9. Evacuation Routes.

Contention 9(c). The County Plan is deficient because the evacuation routes send the evacuees downwind and create greater risk to them in many instances. The plan needs to give adequate consideration to wind directions and possible changes in wind direction during an evacuation.

17. Criterion J.10.k. provides that plans to implement protective measures for the plume exposure pathway should include identification of

and means for dealing with potential impediments to the use of evacuation routes.

18. A table and a figure in the County Plan identify recommended evacuation routes for subzones within the 10-mile plume EPZ, and an appendix contains the route descriptions which will be read over the Emergency Broadcast System in the event of an emergency. (Appls.' Ex. 1, Fig. 3-2, Table 3-4, App. L; Appls.' Test., fol. Tr. 194, at 35; FEMA Test., fol. Tr. 1731, at 39). County emergency planning officials, with some assistance from KG&E, taking into consideration the predominant wind directions for the Wolf Creek site, selected those specific routes. (Tr. 1686-88). The County Plan is designed so that if evacuation is necessary, people will be moved out before any significant release of radioactivity occurs; however, if there is a likelihood that a substantial release will occur prior to or during an evacuation, sheltering in the downwind sectors would be the appropriate protective action to take. (Appls.' Test., fol. Tr. 194, at 36).

19. The County Plan's pre-emergency designation of evacuation routes serves to facilitate public response during an accident in that the public understands specifically which routes to take in the event of an emergency. (Appls.' Test., fol. Tr. 194, at 36; Tr. 1690-91, 1693). The two FEMA witnesses testified that, based upon their experience, none of the plans which they had reviewed designated alternate evacuation routes based upon differing wind directions at the time of the evacuation. (Tr. 1842-43).

20. In the event it becomes necessary to direct the use of different evacuation routes at the time of the emergency, alternate routes could be readily selected and would be conveyed to the public over the Emergency Broadcast System. (Appls.' Test., fol. Tr. 194, at 58; Tr. 954-56; 1714; FEMA Test., fol. Tr. 1731, at 40). It would be too cumbersome to draft EBS announcements in advance of an emergency situation designating the numerous alternative routes which might be necessitated by the wind direction at that time, and it would be too time consuming to make a selection from numerous announcements during the emergency. (Tr. 1843-46).

Contention 9(e). The County Plan does not provide for alternate evacuation routes that will be necessary if there is heavy snow, rain, flooding, or fog.

21. Most of the County is laid out in square mile sections in a grid-like manner, with roads running along these section lines every mile. (Tr. 961; 1693). Because of this extensive road system, the County Emergency Preparedness Coordinator testified that it would be difficult to predesignate alternative evacuation routes. He also testified that such predesignation would be unnecessary - i.e., if a particular designated road was blocked or flooded, via the Emergency Broadcasting System, the public would be notified to take an alternate route. (Appls.' Test., fol. Tr. 194, at 37; Tr. 965-66).

22. With rare exceptions, all of the roads in the County are travelable year round. (Tr. 961-62).

11. Public Alert and Notification System.

Contention 11(a). The County Plan is deficient because it is not possible under the plan to notify 100% of the population within five miles of the site within a fifteen minute period, and it is not possible to assure 100% coverage within 45 minutes for those persons who do not receive the initial notification and are within the ten mile EPZ. The evacuation time will therefore be longer than estimated.

23. NUREG-0654, Appendix 3, provides that (a) the notification system have the capability for providing within 15 minutes an alert signal and an informational or instructional message throughout the 10-mile EPZ, (b) the initial notification system will assure direct coverage of essentially 100% of the population within 5 miles of the site, and that (c) special arrangements will be made to assure 100% coverage within 45 minutes of the population who may not have received the initial notification within the entire plume exposure EPZ. Said Appendix also states that this design objective does not, however, constitute a guarantee that early notification can be provided for everyone with 100% assurance.

24. The three agencies having jurisdiction over the John Redmond Reservoir are the U. S. Fish and Wildlife Service, the Kansas Fish and Game Commission, and the U. S. Army Corps of Engineers. (Appls.' Test., fol. 194, at 92). Initially, one fixed acoustical siren was planned to serve this recreational area. However, as stated at the beginning of the hearing, the determination was made and Applicants have committed to add two more sirens. (Appls.' Ex. 3A; Appls.' Test., fol. Tr. 194, at 43; Tr. 203, 209). All areas of the Redmond Reservoir within the plume

EPZ under the jurisdiction of these three agencies will be covered by these sirens, except for a small portion of land to the extreme west of the recreation area, under the jurisdiction of the U. S. Fish and Wildlife Service. (Appls.' Ex. 3B; Tr. 2138-40). The Fish and Wildlife Service will use its siren equipped vehicles to cover its jurisdictional area, will personally contact individuals where possible, and will put preprinted warning flyers on unattended, parked cars. (Tr. 1151-53, 1252-54). The notification and evacuation procedures for Fish and Wildlife Service are set forth in the County Plan. (Appls.' Ex. 1, App. I). Since the Coffey County Plan Implementing Procedures provide that the Sheriff's use of the telephone will be the primary means of notification to the three agencies, with tone alert radios as backup, the Fish and Wildlife Service's estimate of 45 minutes within which it would be able to notify the public is acceptable to FEMA. (Tr. 374-77).

25. People do not venture out into the middle of the Redmond Reservoir, known as the Mud Flats, because their boats would become stuck in the shallow, silted bottom. (Tr. 1296-97, 1300; 1381; 2162). Even if a person in a boat ventured into the middle of the reservoir, he would be able to hear sirens but it is quite possible he would not hear the siren signal if his motor was running. (Tr. 2144-45). The sirens will be activated for a period of 3-5 minutes. (Appls.' Ex. 1, § 3.2). The Emergency Response Organization of the Fish and Wildlife Service will continue to monitor the area until it has confirmed that the evacuation is complete. (Appls.' Ex. 1, App. I).

26. The siren system is designed to cover areas of moderate-to-high-population density. All 750 residences outside the range of the fixed sirens and within the plume EPZ will be furnished by the Applicants with tone alert radios, and 20 commercial grade tone alert radios will be furnished to similarly sited recreational, educational, and institutional facilities. (Tr. 212; Appls.' Test., fol. 194, at 42-43, 49, 50; Tr. 201, 220, 274-75, 277, 383). FEMA approves of this arrangement. (FEMA Test., fol. Tr. 286, at 9).

27. The County has made provision for Emergency Broadcasting System announcements to remind people to go out into the fields to notify family members or friends who are farming and may not hear the sirens or the tone alert radios. (Tr. 1254-55, 1275).

28. The County Plan contains provisions for individual alerting of persons who, due to deafness or other reasons, cannot hear the sirens or tone alerts. (Appls.' Ex. 1., p. H-8, § 1.2.3(4), § 1.2.5 (1 and 6), § 1.2.6(1), § 3.2, § 5.4). Based on a County survey, it is estimated that approximately 50 households may require special notification. As the County Plan states, personnel under the direction of the Fire Leader will carry out these notifications in Burlington and LeRoy. (There are approximately 40 such households). The Plan also states that personnel under the direction of the County Engineer will carry out these notifications in other areas of the plume exposure pathway EPZ. (There are approximately 10 such households). (Appls.' Test., fol. 194, at 48, 53; FEMA Test., fol. Tr. 286, at 8, 11; Tr. 1908). The County Engineer

has assigned four people to make these notifications and concludes they could complete their assignment within 45 minutes. (Tr. 2318). The Fire Leader will be able to call upon fifty-seven members of the Burlington and LeRoy fire departments to make these notifications. (Appls.' Test., fol. 194, at 48).

29. In implementation of the County Plan a list identifying hearing-impaired persons in the plume EPZ has been prepared from the County survey, and will be updated by the County Health Nurse, by family members and by the return of the attachment to the emergency public information brochure which is mailed annually to the public. (Appls.' Ex. 1, § 3.2; Appls.' Test., fol. Tr. 194, at 53).

30. Letters of agreement have been signed by the County's fire departments of Lebo, Waverly, LeRoy, Gridley and Burlington wherein they commit themselves to provide personnel for notification, as well as for decontamination functions. (Tr. 2359). The County Plan indicates that such letters of agreement will be inserted therein. (Appls.' Ex. 1, App. D).

Contention 11(e). There is no provision about how to make the warning if one or more sirens fail to operate. The evacuation time will therefore be longer than estimated.

31. The County's program for frequent testing, and its frequent usage of the sirens makes it unlikely that the sirens will fail to operate in an emergency. The two Burlington sirens and the LeRoy siren will be used for fires and will be activated daily for morning and noon whistles. All sirens will be used for tornado alerts. All will be

routinely maintained and tested in accordance with regulatory guidance. (Appls.' Test., fol. Tr. 194, at 47; Tr. 329-31; Tr. 1251). If a siren should fail to operate during an emergency, the Sheriff's patrol cars and fire department vehicles on an ad hoc basis would be sent to notify the residents in that area; however, NUREG-0654 does not require that such a redundant means of notification be set forth in the County Plan. (Tr. 968-69; Appls.' Test., fol. Tr. 194, at 226; Tr. 345-46).

Contention 11(j). There is no provision for testing or maintenance of the tone alerts. The evacuation time will therefore be longer than estimated.

32. While FEMA's Standard Guide For the Evaluation Of Alert And Notification Systems states that at least monthly testing is desirable, the County Plan specifies that tone alert radios are to be tested by the Emergency Broadcast System on a weekly basis. (FEMA Ex. 1, at E-11; Appls.' Ex. 1, at H-8). A brochure, accompanying each of the tone alert radios to be furnished by the Applicants, informs the recipient that the radio will be tested once a week, and instructs that, if there is a malfunction, the recipient should obtain a replacement from the Emergency Preparedness Coordinator. That County official's department will have approximately 300 spare replacements. (Appls. Test., fol. Tr. 194, at 52; Tr. 976-77; Tr. 261-62, 264).

12. Public Emergency Planning And Information.

Contention 12(e). There is no detail about how the education information will be provided to transients.

33. 10 C.F.R. § 50.47(b)(7) states that emergency response plans must establish procedures for the coordinated dissemination of

information to the public. NUREG-0654, Criterion G.2., provides that signs shall also be used to disseminate appropriate information to any transient population within the plume exposure pathway EPZ.

34. Large public information billboards will be placed on the access roads to the Redmond Reservoir to provide emergency information to transients, but the number and exact locations of the billboards have not been finalized. The billboards will instruct the visitors that upon the activation of the sirens or other notification of an emergency, they should turn to identified EBS stations on their automobile radios. The EBS announcements will identify the evacuation routes and the registration centers for the transients at the Reservoir. (Appls.' Test., fol. Tr. 194, at 57; FEMA Test., fol Tr. 1731, at 49; Tr. 1333, 1376-77; Tr. 1652; Tr. 1918-19; Appls. Ex. 1, § 5.4). Further, flyers will be left on the windshields of unattended vehicles at the reservoir, which include the basic information on the billboards plus a map of the evacuation routes. (Tr. 1326).

35. A supply of emergency public information brochures will be provided to area motels for their guests. (Appls.' Test., fol. Tr. 194, at 57). Area telephone books will contain information summarized from the public information brochures. (Tr. 1316). The EBS announcements will advise transients that emergency information is contained in telephone directories. (Tr. 1344).

Contention 12(s). The County Plan is deficient because in Section 3.3.1 the Public Information Officer will advise the parents where children have been evacuated to. This information

should have been supplied to the parents at an earlier time. The plan does not make provision for providing such information.

36. The County Plan identifies the host counties' registration centers for schools being evacuated. (Appls.' Ex. 1, Table 3-6). The emergency public information brochure (annually distributed to area residents) will tell parents which host county facility their children will be evacuated to in an emergency. This same information would be repeated to parents at the time of an emergency via the EBS announcements, which announcements are included in the County Plan. (Appls.' Test., fol. Tr. 194, at 66; Tr. 1373-74; Appls.' Ex. 1, Appendix L-13). The County Plan also identifies the host counties' registration centers for schools being evacuated. (Appls.' Ex. 1, Table 3-6).

13. Evacuation of Pregnant Women and Small Children.

Contention 13(b). The County Plan does not provide for transportation for the evacuation of pregnant women and small children if they are evacuated before others. If buses or other means of transportation are used for them, then that transportation might not be available to others when there would be a full evacuation.

37. The County Plan reflects that following a nuclear incident involving a release to the atmosphere, while evacuation for the general population may not be recommended, monitoring of the whole body and thyroid dose may prompt the early initiation of protective evacuation of pregnant women and small children. (Appls.' Ex. 1, § 3.3 and Appendix E, p. E-9). While it is believed that there will be very few pregnant women or families with small children who will not have their own

vehicles, if emergency transportation is needed, as reflected in finding 9, supra, they may call the County Shop for assistance. (Appls.' Test., fol. Tr. 194, at 69; Tr. 1138; FEMA Test., fol. Tr. 1731, at 60; Tr. 1921-22).

38. If additional transportation is needed for the protective evacuation of pregnant women and their pre-school children during school hours, buses from one of the outlying school districts (outside the EPZ) would be utilized. Neither Burlington nor LeRoy buses would be utilized for this purpose. They would be held in stand-by because, if an evacuation of the general population was subsequently mandated, they would be needed to evacuate the Burlington schools. (Tr. 1140, 1285).

14. Evacuation of Schools.

Contention 14(a). The teachers, school administrators, and children have not been trained about how to handle the evacuation, and there are no plans in the County Plan to specify how they will be instructed to deal with an emergency evacuation.

39. NUREG-0654, Criterion 0.1, states: "Each organization shall assure the training of appropriate individuals."

40. The determination of "appropriate" is dependent upon the function the individual assumes in an emergency. (FEMA Test., fol. Tr. 1731, at 61). Individuals with specific emergency response roles to fill in an evacuation should be informed of their roles prior to an emergency. (Tr. 417, 435, 439, 486, 488-89, 510). In addition, those who are charged with making the decision to evacuate need to be informed about the nature of the risk attendant to radiation. (Tr. 510-11).

41. School administrators will receive training under the Joint Training Program. Specifically, superintendents and principals will be trained in an overview of the State, County and KG&E emergency plans, their position role in the emergency plans, and basic radiation effects and protection. (Tr. 1259).

42. Teachers will receive the instruction needed to perform their role in an evacuation. In particular, teachers' roles in an evacuation (e.g., boarding students on buses and possibly accompanying them, or driving them in cars to a registration center) will be discussed with them as part of teacher orientation, conducted by school administrators at the beginning of each academic year. In addition, at the orientations, all teachers will receive copies of the Wolf Creek emergency public information brochure, which will include educational information on radiation. (Tr. 417, 434-35, 438-39, 486-89, 510, 1257-58). Because teachers' roles in an evacuation generally parallel their normal activities, and because they are not charged with making the decision to evacuate the schools, teachers need not receive other special training. (Tr. 417, 434-35, 438-39, 486-89, 510, 1257-58).

43. School children have no special response role in an evacuation. They carry out those actions required in an emergency on a routine daily basis: e.g., how to stand in line and how to board buses. (Tr. 416-7, 1284-85). Pre-emergency instruction about matters such as destination will not enhance their safety in an emergency. (Tr. 440-42). Similarly, their health and safety in an evacuation will

not be affected by their knowledge of the nature of radiation, because the decision to evacuate is made by others - whether they are at home or at school at the time of the emergency. Therefore, no special training is necessary to protect the children's health and safety in an evacuation. (Tr. 416-17, 439-40, 488-89, 510-11; 1284-85). The FEMA witness did not know of any nuclear emergency plan that includes provisions for evacuation training for children. (Tr. 1924).

Contention 14(b). There are not enough school buses available to evacuate school children.

44. NUREG-0654, Criterion J.10.g, calls for the plan to implement protective measures for the plume EPZ, including means of relocation.

45. The Burlington school district has a current enrollment of approximately 750 and has 10 buses and three smaller vehicles. At maximum bus capacity, 659 Burlington students could be evacuated by bus in a single lift. About 30 teachers' cars would be used to transport the remaining Burlington students. (Appls.' Test., fol. Tr. 194, at 27, as corrected at Tr. 694-96; Tr. 724-25, 784-85, 798-99, 1928). With sufficient teachers' cars available, FEMA approves of these plans for the evacuation of the public schools. (FEMA Test., fol. Tr. 1731, at 62; Tr. 1926-27). While the County Engineer could not personally attest to the availability of teachers' cars for evacuation, the record indicates that the Superintendent of the Burlington schools has made the decision to use teachers' cars to transport students who could not be accommodated on buses. (Tr. 785). A FEMA witness testified that teachers could be informed at the beginning of the school year or when

they are hired that their cars may be used during an evacuation and that letters of agreement are unnecessary. (Tr. 1926-27).

46. If, for any reason, sufficient teachers' cars were not available, the Burlington school evacuation would be completed using the first buses arriving from surrounding school districts. (Tr. 798-99). These buses would be available to provide transportation for evacuating students and other special populations as soon as their own students were taken home (sooner if school were not in session). (Appls.' Test., fol. Tr. 194, at 27, as corrected at Tr. 694-96; Tr. 722, 1928). Letters of agreement for school buses have been signed with the school districts for Lebo, Waverly, LeRoy and Gridley. The agreement for the Burlington district was to be signed shortly after the close of the hearing. (Tr. 2358-59).

15. Evacuation of Health Care Facilities and Residents Needing Special Transportation Assistance.

Contention 15(a). The County Plan does not detail what type of health services will be provided for persons who are in institutions or under care on an outpatient basis prior to the accident. It does not specify which hospital they will be taken to. The plan does not consider the number of patients to be cared for.

47. NUREG-0654, Criterion J.10.d, prescribes planning to protect persons "whose mobility may be impaired due to such factors as institutional or other confinement."

48. There are existing unwritten arrangements between Coffey County Hospital and hospitals with available beds in surrounding counties. These arrangements provide for the transfer of patients from

Coffey County in emergency situations and have always been honored. (Appls.' Test., fol. Tr. 194, at 73; FEMA Test., fol. Tr. 1731, at 67; Tr. 812-16, 841, 851). FEMA requires signed agreements with hospitals that will receive patients. (Tr. 1941).

49. The hospitals and numbers of beds available to Coffey County patients in an emergency are as follows: Newman Hospital, Emporia - 100 beds (Tr. 813, 815, 847-48); St. Mary's Hospital, Emporia - 40 to 45 beds (Tr. 815-16); Anderson County Hospital, Garnett - 25 beds; Allen County Hospital, Iola - 10 beds (Tr. 816). Ransom Memorial Hospital, Ottawa - 42 beds. Greenwood County Hospital, Eureka - 20 beds (Tr. 850-51). In addition, in an emergency, Ransom would make available another 15 to 20 beds that are normally reserved for medical students or staff who are "sleeping over." (Tr. 850).

50. The Golden Age Lodge Nursing Home has a capacity of 102 and, at the time of the hearing, had a census of 91 residents. (Appls.' Test., fol. Tr. 194, at 74, as corrected at Tr. 809, Tr. 813, 819). There are unsigned agreements with the hospitals in the surrounding counties to receive the nursing home residents during an evacuation. (Tr. 851). Flint Hills Manor nursing home in Emporia with an average available capacity of 35 beds has also agreed to accept nursing home patients from Coffey County. (Tr. 851).

Contention 15(c). Coffey County does not have sufficient transportation (ambulances, buses, etc.) to evacuate people from nursing homes and the Coffey County Hospital.

51. The Coffey County Hospital has two critical care beds. However, it has been conservatively assumed that four hospital patients would require evacuation by ambulance or other stretcher-carrying vehicle. (FEMA Test., fol. Tr. 1731, at 68; Tr. 854; Appls.' Ex. 1, at K-6). The nursing home estimates that about 25% of the residents (approximately 25 patients) would need to be transported by ambulance or other similar vehicle. (Appls.' Test. fol. Tr. 194, at 74; Tr. 824).

52. Coffey County has two ambulances with a total capacity of 8. Under existing arrangements with surrounding counties, Coffey County can, and regularly does, call on their ambulance resources. These ambulances are in Anderson County (2), Lyon County (3), Woodson County (2), Humboldt (1), Moran (1), Iola (2), Franklin County (3), and Osage County (2). Also, St. Mary's Hospital in Emporia has 2 ambulances. The combined capacity is about 50 patients. (Appls.' Test., fol. Tr. 194, at 74; as corrected at Tr. 809, 828, 846). The County Plan includes signed Mutual Aid Agreements with Allen, Lyon, Anderson, and Franklin Counties which, among other provisions and upon request, will send assistance in the form of equipment as it can muster during an emergency. (Appls.' Ex. 1, at D-3-10).

53. Funeral directors' vehicles and ambulance helicopters would also be available to assist in an evacuation. The head of the Kansas Funeral Directors Association (KFDA) and another representative from the State of Kansas attended a FEMA course in 1983, in which FEMA presented guidelines on the use of funeral directors' vehicles (station wagons,

hearses, etc.) in an emergency. Through the KFDA, funeral home directors in the Wolf Creek area have agreed to provide vehicles with a combined capacity of 46 stretchers, to assist with evacuation in an emergency. (Appls.' Test. fol. Tr. 194, at 74; Tr. 821-22, 852-53). The Military Assistance to Safety and Traffic program based at Fort Riley, Kansas (approximately 70 air miles from Coffey County) has 6 ambulance helicopters with a combined capacity of 18 litters. (Appls.' Test., fol. Tr. 194, at 74-75).

Contention 15(n). The County Health Nurse has not compiled a list of county residents who are shut-ins or who may need special evacuation assistance.

Contention 15(o). The County Plan does not make adequate provision for preparing a list of county residents who are shut in or who may need special evacuation assistance, and does not make adequate provision for updating the list as changes occur.

54. NUREG-0654, Criterion J.10.d, indicates that State and local governments should provide means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement.

55. Persons requiring special emergency transportation or other special evacuation assistance are identified by the County Survey and by family members, in conjunction with the list of "home help" patients normally maintained by the County Health Nurse. This responsibility of the County Health Nurse is stated in the County Plan. (Appls.' Test., fol. Tr. 194, at 82; Appls.' Ex. 1, at 1-9; Tr. 1939-40).

56. A list of those who may need special notification, including the hearing impaired, is being compiled. (See finding 28, supra). The

list of persons who may need transportation assistance in an evacuation is being developed, and will be maintained and updated in the same manner and on the same basis as the list of individuals needing special notification. (Appls.' Test., fol. Tr. 194, at 83). Using information obtained monthly from the County Treasurer, the County Appraiser, and from the utilities, new residents of the plume EPZ will be contacted to determine special needs if any. The annual mailing of the emergency public information brochure will include a request for updated information on individuals requiring special assistance. At least once a month, the list will be updated based on all available information. (Appls.' Test., fol. Tr. 194, at 82; Tr. 1143-45). The procedure for updating the list meets with FEMA's approval. (Tr. 1953). The provisions for maintaining the list are specified in the County Plan. (Appls.' Ex. 1, at 1-5, 7, 8, 9).

16. Evacuation of Persons Without Private Transportation.

Contention 16(a). The County Plan does not detail how many individuals will need transportation assistance that the County Engineer is to provide for an evacuation. There is inadequate detail about how the Engineer will know who to evacuate.

57. It is estimated from the County Survey that approximately 120 individuals may require transportation assistance in an evacuation. (Appls.' Test., fol. Tr. 194, at 83, 85; Tr. 1147; Tr. 1979). A list of those individuals is being developed, and will be maintained and updated, in the same manner and on the same basis as the list of individuals needing special notification. The County Engineer will have

this list and its updates. (Appls.' Test., fol. Tr. 194, at 83; Tr. 732).

58. At the time of an evacuation, some people who normally have private transportation might need transportation assistance (e.g., their cars are being repaired, etc.) (FEMA Test., fol. Tr. 1731, at 83; Tr. 730). They may call the County Shop to secure emergency transportation. (See finding 9, supra). The County is unable to estimate with reasonable accuracy the number of persons who might need to call in to request transportation at the time of an emergency. (Tr. 1147; Tr. 1983). FEMA is satisfied that the County has met this concern with the availability of excess bus capacity. (Tr. 1981, 1983-84).

Contention 16(1). There are not enough vehicles available to provide transportation for those who do not have their own means of transportation.

59. It has been estimated that 329 persons within the plume EPZ, other than public school students and other than those individuals whose vehicles, for example, are being repaired, will need school bus transportation. This estimate includes children in private schools and day care centers, ambulatory hospital patients and nursing home residents, and members of the general public who do not have access to private transportation. Not including Burlington and LeRoy, the towns of Gridley, Lebo and Waverly have in aggregate eighteen school buses and two vans with a nominal capacity of 726 to evacuate these individuals. (Tr. 2017-19). As confirmed by the County Survey, evacuation for those

without their own means of transportation will in most cases be by relatives, neighbors and friends. Thus, the available bus capacity has been identified and exceeds the estimated needs. (Tr. 1678-81; 1983-84). Excess bus capacity will meet the demands of those individuals who normally would have their own transportation but for various reasons may be without it during an emergency. (See finding 58, supra). FEMA is satisfied that there are enough vehicles available to provide transportation for those who need special transportation or do not have their own means of transportation. (Tr. 1979-81).

60. The Coffey County Engineer testified that, while it might take two hours (or a little longer if there were delays at the registration center or delays due to traffic conditions) for the Burlington school buses to evacuate their students to Emporia and return to the plume EPZ, buses from schools outside the plume EPZ (Gridley, Lebo, and Waverly) could take their students home and be available within one and one-half hours to commence the evacuation from the plume EPZ of those persons needing special transportation. (Tr. 777-79, 705-07). The Coffey County Plan estimates that it would take a maximum of 2.5 hours to evacuate this special population, which includes the 1.5 hours discussed above. (Appls.' Ex. 1, pp. 3-5; Tr. 1948-49).

61. There is no probative evidence that the Gridley, Lebo, and Waverly buses could not load their students, unload them and be available within 1.5 hours to begin the evacuation of those needing special transportation and obviously these buses coming into the plume

EPZ would not be delayed in order to be decontaminated. Reduced speeds for school buses and the affect of adverse weather conditions have been considered in the County Plan's evacuation time estimate. (Appls.' Ex. 1, § 3.3, and Table K-7; Appls.' Test., fol. Tr. 194, at 32; Tr. 1664-65, 1700-01; 1997). Even if a half-hour was needed for loading, these buses would be able to effect the evacuation within the estimated 2.5 hours. (Tr. 1996).

Contention 16(m). The Engineer has not made arrangements to obtain school buses.

62. Coffey County has signed letters of agreement with Unified School Districts 243 (Lebo/Waverly) and 245 (LeRoy/Gridley) which provide for the availability of school buses for emergency transportation needs. A corresponding letter of agreement with School District 24 (Burlington) was scheduled to be signed shortly after the close of the evidentiary hearings. The School Board attorney assured the County Emergency Preparedness Coordinator that there were no substantive impediments to its approval. (Tr. 721-22, 795-96, 2358-59; Appls.' Test., fol. Tr. 194, at 90). School Districts 243 and 245 contract with private companies for their buses, while all buses in School District 244 are owned by the District. (Tr. 776-77).

Contention 16(n). The County Plan is deficient because the school buses listed in Table 3-8 will be required for evacuation of school children and will not be available to provide other emergency transportation.

63. If school is in session, the school buses from School Districts 243, 244 and 245 will be available for emergency

transportation after they have taken their school populations out of the plume EPZ or home. If school is not in session, the buses would be available sooner. (Appls.' Test., fol. Tr. 194, at 91, as corrected at Tr. 696-97; FEMA Test., fol. Tr. 1731, at 87; Tr. 704-05, 707, 722). Individuals, other than school children, dependent upon the buses for emergency transportation, are ambulatory patients from the hospital and nursing home, children at private schools and day care centers and other people who do not have transportation. (See finding 59, supra).

18. Traffic Control, Access Control and EPZ Security.

Contention 18(a). The County Plan does not provide for enough traffic control. There is too little traffic control provision within the ten mile EPZ.

64. Because of the large number of roads and the relatively low population in the plume EPZ, little, if any, traffic control will be necessary. (Appls.' Test., fol. Tr. 194, at 99). The Evacuation Time Estimate Study indicates an average vehicle speed and an average inter-vehicular distance sufficient to allow traffic to merge from the sparsely-populated rural areas into the outgoing traffic pattern without the assistance of extensive traffic control. (Appls.' Test., fol. Tr. 194, at 99-100; Appls.' Ex. 1, at 3-9). The Federal Highway Administration concurs in the route capacities used. (FEMA Test., fol. Tr. 1731, at 90).

65. Five traffic control positions are contemplated. (Appls.' Test., fol. Tr. 194, at 99, 101; FEMA Test., fol. Tr. 1731, at 90; Tr. 655-56). Three positions are outside the plume EPZ at locations

suitable for turnaround of tractors/trailers and are not required for control of auto traffic. (Appls.' Test. fol., Tr. 194, at 99; Tr. 652, 653-36). Traffic control in Burlington and in the vicinity of John Redmond Reservoir is unnecessary. (Tr. 681-82, 685). The identified traffic control positions are adequate. (Tr. 2037).

66. Area residents are familiar with the local road network and may select other suitable routes out of the plume EPZ. (Tr. 656-57). The key determinant of the route used to exit the plume EPZ by Redmond Reservoir visitors will be the information provided in the EBS announcements. (Tr. 468). FEMA will review the EBS announcements to ensure clarity of information to Reservoir visitors. (Tr. 1337-38, 1376-77).

Contention 18(r). The County Plan is deficient because it does not provide that the entire evacuated area will be blocked. It only contemplates that it will be blocked as resources become available.

67. All roads can be barricaded within four hours. (Appls.' Ex. 1, at 3-8, 3-9; Appls.' Test., fol. Tr. 194, at 109). Four of the six priority roadblocks will be manned 24 hours per day for the duration of the emergency by County Engineer personnel. The other two will be manned for a short period (about 1 hour) by County Sheriff's deputies, and will be permanently relieved by Kansas Highway Patrol (KHP) officers. (Appls.' Test., fol. Tr. 194, at 103). National Guard personnel as they become available will man all secondary roadblocks. This meets with FEMA's approval. (Appls.' Test., fol. Tr. 194, at 109; FEMA Test., fol. Tr. 1731, at 99; Tr. 2030).

68. See finding 16, supra.

Contention 18(aa). The Sheriff does not have enough personnel to secure the evacuated area on a 24-hour per day basis.

69. The County Sheriff has primary responsibility for providing 24-hour per day security for the evacuated areas. (Appls.' Test., fol. Tr. 194, at 115; FEMA Test., fol. Tr. 1731, at 106; Tr. 668; Appls.' Ex. 1, at 1-4). Additional security for the evacuated area would be provided by manned roadblocks and roving patrols. (Appls.' Test., fol. Tr. 194, at 116, Tr. 668-71).

70. Priority roadblocks will be maintained by the KHP (2 roadblocks) and County Engineer personnel (4 roadblocks). All secondary roadblocks will be manned by the National Guard. (Appls.' Test., fol. Tr. 194, at 116; FEMA Test., fol. Tr. 1731, at 106). In addition, Sheriff's deputies would patrol around the evacuated area. (Appls.' Test., fol. Tr. 194, at 115, 116; Tr. 669). KHP will station 3 officers with vehicles at the State Forward Staging Area in New Strawn. The KHP officers will be available to assist the Sheriff's deputies in controlling unauthorized entry into the plume EPZ. (Appls.' Test., fol. Tr. 194, at 115, 116). FEMA is satisfied with the provisions for 24-hour per day plume EPZ security. (Tr. 2031-32).

19. Radiation Monitoring and Decontamination.

a. Staffing

Contention 19(e). There is no person designated or trained to act for the Radiological Defense Officer if he is not available or is to be relieved during an accident.

71. An alternate Radiological Defense Officer has been selected. The County Plan provides for the alternate to carry out the Radiological Defense Officer's (RDO) functions if the RDO is unavailable or must be relieved during an accident. (FEMA Test., fol. Tr. 1731, at 109; Appls.' Test., fol. Tr. 194, at 118; Tr. 1410-11; Appls.' Ex. 1, at 1-11). The alternate RDO will receive the standard FEMA training course. (Tr. 1411, 1566-67).

Contention 19(h). The County Radiation Monitoring Team has not been selected.

Contention 19(i). The County Plan is deficient because it does not state how many members of the Radiological Monitoring Team will be required, and does not contemplate enough people to handle the duties of the Radiological Monitoring Team.

72. Coffey County currently has about 48 people who have had the FEMA Radiological Monitoring Training Course and eight hours of classroom training in the use of radiation monitoring instruments. The County plans to train an additional 25 people. From the total group, 21 will be selected for additional training to qualify them for off-site monitoring and sample collection, as members of the joint radiation monitoring teams. (Appls.' Test., fol. Tr. 194, at 121, as corrected at Tr. 1395A, 1409; 1413-15, 1537-39, 1561-63, 1565-66, 2050-51).

73. Fourteen persons from the County are required to meet the County's radiation monitoring duties for the Joint Radiation Monitoring Team. Twenty-one will be available. (Appls.' Test., fol. Tr. 194, at 122, as corrected at Tr. 1395-96; see finding 72 above). Their assignments will be made prior to the full-scale exercise. (Tr. 2051).

The roster of team members may be included within the Implementing Procedures. (Tr. 2031, 2050-52).

74. Six monitors per shift (12-hour shifts) will be needed for the access control positions. These would be chosen from the trained monitors not involved in the Joint Radiation Monitoring teams. (Appls. Test., fol. Tr. 194, at 122). FEMA has determined that the plan satisfies the provisions of NUREG-0654. (FEMA Test., fol. Tr. 1731, at 113, as corrected at Tr. 2053).

Contention 19(k). Coffey County will not be able to perform decontamination and radiation checks within the County and at evacuation centers, because it is not adequately staffed. There is no provision in the County Plan for an adequate number of personnel to supplement the County Radiation Monitoring Team in order to check evacuees and vehicles at shelters for contamination. The Coffey County Plan shows 104 people will be needed at the evacuation centers for contamination checks (pp. 3-8). None of these are available. At least 150 will be needed for this. The plan does not specify how they will be recruited. Also, there are no people available at the evacuation centers to handle decontamination. It is possible that as many as 100 people will be required for decontamination.

75. NUREG-0654, Criterion J.12, specifies that radiation monitoring personnel at registration centers "should be capable of monitoring within about a 12-hour period all residents and transients" from the plume EF₂. This twelve-hour period is neither a precise upper limit, nor a guarantee that all monitoring will be conducted within 12 hours. Rather, it is guidance as to the expected capability of the monitoring organization. (Tr. 2053). Decontamination need not be performed within any specified time period. (Tr. 2073-74).

76. Radiological monitors from the four host counties are responsible for the monitoring and decontamination of evacuees and vehicles at registration centers. Based upon the expected number of evacuees and a 2½-minute time to monitor each evacuee, the following number of monitors will be needed in each host county: Franklin County - 4 (1,000 evacuees); Lyon County - 12 (3,700 evacuees); Allen County - 4 (1,200 evacuees); Anderson County - 6 (1,600 evacuees).⁷ The monitors will be selected and trained before full power operation at Wolf Creek. (Appls.' Test., fol. Tr. 194, at 123, as corrected at Tr. 1396; FEMA Test., fol. Tr. 1731, at 115-116; Appls.' Ex. 1, at 3-13, Tr. 1417-26, 1567-68, 1574, 2070). FEMA has determined that 26 host county radiation monitoring personnel will be sufficient. (Tr. 2070-73). A 2½-minute time to monitor each evacuee is very conservative. (Tr. 1418-19). There is no regulatory basis that requires women evacuees to be checked for contamination by women monitors and the subject need not be described in the plan. (Tr. 2076-77).⁸ If necessary, additional radiation monitoring personnel

7 The Coffey County Shelter Systems Officer has estimated the maximum number of individuals (worst-case) that could evacuate to each host county: Franklin County (1,770), Lyon County (6,863), Allen County (1,247), Anderson County (3,873). To be conservative, each number was inflated by 20%. (Tr. 524-25).

8 The State Plan's discussion of privacy for individuals being screened for contamination indicates that emergency workers would be sensitive to the personal needs and concerns of evacuees. (See Appls.' Ex. 2, at K-7, 8).

are available from the Kansas Department of Transportation, or the Radiological Defense Officer could dispatch reserve Coffey County radiation monitoring personnel to registration centers to assist host county personnel. (Appls.' Test., fol. Tr. 194, at 123; Tr. 1568).

77. Should evacuees need decontamination, the host county radiation monitoring personnel would explain the process to each, and the evacuees would decontaminate themselves. Assistance would be available for small children and those physically unable to decontaminate themselves. After decontamination, the evacuees would again be monitored. This procedure is satisfactory to FEMA. (Tr. 1424-26, 1431-33, 2101-02).

78. NUREG-0654 does not specify any period of time within which vehicles must be monitored and decontaminated. This could be accomplished after monitoring and decontamination of evacuees has been completed. (Tr. 1543-44, 2075)

Contention 19(1). The Fire Leader does not have enough personnel to conduct the decontamination activities.

79. Letters of agreement for decontamination services at access control positions have been signed with all fire departments in Coffey County - Lebo, Waverly, LeRoy, Gridley and Burlington. (Tr. 2359). The County Plan indicates that such letters of agreement will be inserted therein. (Appls.' Ex. 1, App. D). The County has agreed to make the letters of agreement available to FEMA for review at any time. (Tr. 2361). The five fire departments have adequate personnel (approximately 110 members) and equipment (about 24 vehicles) to conduct

decontamination activities while carrying out any other activities. (App'ls.' Test., fol. Tr. 194, at 124; FEMA Test., fol. Tr. 1731, at 117-18; App'ls.' Ex. 1, at 3-10, 11; Tr. 1160-62. FEMA is satisfied that sufficient fire department personnel and equipment will be made available for decontamination at access control positions. (Tr. 2055, 2079, 2103). Furthermore, historical experience shows that County fire department personnel are dedicated to the fulfillment of their community obligation and that they would respond in an emergency. (Tr. 1287).

b. Availability of Equipment.

Contention 19(r). The Coffey County Radiation Monitoring Team does not have proper radiation monitoring equipment to monitor radiation in the event of an evacuation.

80. Seven air samplers, to be provided by KG&E, are on order and will be available before the full-scale exercise. The State Plan will describe this new equipment. (App'ls.' Test., fol. Tr. 194, at 126; Tr. 866-67, 1574-75).

Contention 19(aa). The Coffey County Radiation Monitoring Team does not have the communications equipment it needs to keep in touch with the County Emergency Operations Center and others. The Coffey County Plan is deficient where it provides that the Radiation Monitoring Team will communicate with the County EOC by telephone. In all likelihood, there will not be enough telephone lines available so that prompt communication can be accomplished.

81. Each Joint Radiation Monitoring Team will be in direct radio communication with the KG&E's Emergency Operation Facility (EOF) via portable radio. The EOF serves as the base of operation for the Joint Radiation Monitoring teams. Information on team progress, summary data, dose projections, and plume direction will be supplied to the

Radiological Defense Officer at the EOC via the radio and/or telephone links between the EOF and the EOC. County radiation monitoring personnel assigned to access control positions will have radio communication to the EOC or State Forward Staging Area through the County Engineer personnel or law enforcement personnel stationed at each access control position. No additional communications equipment is needed for County radiation monitoring personnel. (Appls.' Test., fol. Tr. 194, at 132-33; Appls.' Ex. 1, at 3-13; FEMA Test., fol. Tr. 1731, at 131-32; Tr. 1435-37, 1569-70). There is no requirement that there be direct communication between the EOC and the monitoring teams.⁹

c. Monitoring/Decontamination Procedures

Contention 19(hh). The State Plan does not assume all evacuees will be checked for contamination. The Coffey County Plan does so. The County Plan is deficient because it does not require that all evacuees go to the designated shelter area outside the evacuation zone for a contamination check. Once the evacuees are out of the area, it will not be possible to adequately notify them to go for a contamination check. It must be clear in the plans that all evacuees will be checked for contamination.

82. EBS announcements will direct all evacuees to proceed to registration centers. The announcements will be expanded to explain the nature of the hazard posed by radiation and the availability and

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Criterion F.1.d of NUREG-0654, cited by Intervenor's Opinion at 42, does not require direct communications, but only that communications be provided between the plant, the EOF, and EOC and radiological monitoring teams. FEMA does not require direct communications between the EOC and the teams. (FEMA Test., fol. Tr. 1731, at 131).

efficacy of contamination checks. These revisions will provide assurance that the public will avail itself of radiation monitoring services at registration centers. (Appls.' Test., fol. Tr. 194, at 137; Tr. 461, 513-14, 570-71). Similar information will be incorporated into the public information brochure. (Tr. 1373-74).

Contention 19(kk). The County Plan is deficient because it does not provide for disposal of contaminated equipment, vehicles, decontamination water, or any other materials that might be contaminated.

83. The Radiological Defense Officer, with the assistance of KG&E, will retrieve any contaminated material from the registration centers for subsequent disposal. Clothing can be washed and returned, or disposed of, if necessary. KG&E could process contaminated materials at the plant site, could contact another regional utility and process material at that location, or could contract with a local vendor specializing in decontamination services, and arrange for the use of a portable decontamination unit. (Appls.' Test., fol. Tr. 194, at 140; FEMA Test., fol. Tr. 1731, at 138; Appls.' Ex. 1, at 3-13; Appls.' Ex. 2, at K-8-12; Tr. 1570-71, 2069-70, 2091-92, 2096-97). There, however, is no evidence in the record that the plant site would be inaccessible

to provide the necessary decontamination services.¹⁰ Letters of agreement with commercial enterprises are unnecessary.¹¹

84. Vehicles can be decontaminated by washing. Water would be released but is not likely to be a public health or safety problem - personal health and safety of evacuees would be the initial concern. (Appls.' Test., fol. Tr. 194, at 140; Appls.' Ex. 2, at K-12; Tr. 1441, 1449-50, 1570). The State would, however, monitor the disposal of decontamination water in the host counties. (Tr. 1443, 1450).

20. Shelter Facilities and Services.

Contention 20(d). There are no people available to provide management at the evacuation centers. Up to 9,000 people would be evacuated. One person for each 50 people evacuated will be needed. Therefore, 180 people are required.

85. 10 C.F.R. § 50.47(b)(1) reflects that principal response organizations shall have the Staff to respond to emergencies. NUREG-0654, Criterion A.3, provides that "Each plan shall include written agreements referring to the concept of operations developed

10 Contrary to Intervenors' representations, Mr. Mannell did not testify that the plant might not be available for decontamination services or waste disposal, due to contamination onsite. Rather, Intervenors' counsel inquired, "What if we had an accident that * * * made it not possible to use Wolf Creek; what would happen?" Mr. Mannell responded, "I do not have that information." (Compare IPF 41 with Tr. 1445).

11 Intervenors cite the testimony of Mr. Lewis, for the proposition that there are no letters of agreement with commercial services. However, they ignore his testimony that such letters of agreement are unnecessary (due to the commercial nature of the service). (Compare IPF 41 with Tr. 1571).

between Federal, State, and local agencies and other support organizations having an emergency response role within the Emergency Planning Zones.

86. The estimated numbers of people required to handle registration in the host counties are 11 school personnel for Franklin County, 48 service club members for Lyon County, 28 school personnel for Anderson County, and 10 school personnel for Allen County. (Tr. 583-84, 594-95, 599-600). If sufficient numbers of host county personnel were unavailable to handle registration, the evacuees themselves could provide assistance. (Tr. 568-69, 635).

87. The Crisis Relocation Plan (developed in the event of a nuclear war) already calls for manning registration centers in Franklin, Anderson, and Allen Counties with school personnel. (Appls.' Test. fol. Tr. 194, at 153; 599-600; Tr. 603-06). The Coffey County Shelter Systems Officer testified that, in the absence of written agreement, there is nothing to indicate reluctance of school teachers to assist in emergencies, under the direction of the School Board and the Superintendent. (Tr. 634). A FEMA witness believes that letters of agreement with school personnel and teachers are unnecessary for the provision of registration services. (Tr. 2108).

88. While there is no written agreement with the Lyon County service organizations that would assist with registration, there are verbal agreements that have been honored in the past, and are expected to be honored in the future. (Tr. 604-05).

89. The Coffey County Shelter Systems Officer, whose testimony was based on local emergency response experience, and Dr. Mileti (a sociologist with expertise in the study of public emergency response), whose testimony was based on studies of disasters, agree that the absence of written agreements has never resulted in the lack of sufficient personnel to staff registration or public shelter facilities. (Tr. 566-68).

90. Shelter facilities in the host counties will be staffed by volunteers from service organizations. Those organizations have assured the host county Emergency Preparedness Coordinators that they have sufficient personnel to discharge their responsibilities under their verbal agreements. (Tr. 558-60). The Kansas Department of Social and Rehabilitation Service (SRS) is also available to assist with registration and sheltering in an emergency. (Appls.' Ex. 2, p. B-17). Because SRS is a State agency, no letter of agreement is necessary. (FEMA Test. fol. Tr. 1731, at 145). A FEMA witness expressed the opinion that letters of agreement are not required of service organizations who will provide volunteers; these volunteers, like teachers, are outside the scope of NUREG-0654, Criterion A3. (Tr. 2108-15).

Contention 20(k). There are not enough facilities for 9,000 evacuees at the shelter center. This will require sleeping, food preparation, medical, sanitation, and other facilities if the shelter needs are met. The County Plan does not provide details about the extent of the resources required for food, sleeping, safety, health and sanitation, communications, recreation and religious affairs.

Contention 20(m). There has been no provision made about paying shelter owners for use of their site or services.

91. See finding 85, supra, for wording of NUREG-0654, Criterion A.3.

92. The shelters to be used are public/community facilities such as armories, schools, churches and a university. (Appls.' Test. fol. Tr. 194, at 151; FEMA Test., fol. Tr. 1731, at 152). It has been FEMA's experience that such facilities have willingly been made available for shelter during emergencies, even in the absence of prior arrangements and FEMA agrees that letters of agreement are not required. (Tr. 2097-98). This has been confirmed by local experience. (Tr. 566). The federal government has entered into agreements to secure the use of some shelters identified in Crisis Relocation Plans; for the others there are verbal agreements that, according to the Coffey County Shelter Systems Officer, have always been honored. (Tr. 531).

93. The Emergency Preparedness Coordinators for the four host counties have contacted food suppliers, who have agreed to provide food on request and arrange for payment afterward. All of the four coordinators are confident that they have binding verbal agreements with their suppliers and that written agreements are unnecessary. (Tr. 537-38, 540-41, 552, 556). FEMA agrees that such letters of agreement are not required since food suppliers are not support organizations in the sense of NUREG-0654, Criterion A.3. (Tr. 2114-5). Further, Applicants' expert witness testified that, based upon his experience and studies, he was unaware of any case where shelter or food

has been denied because there were no written agreements to provide them (Tr. 567), and his opinion was confirmed by local experience (Tr. 566).

25. County EOC Evacuation.

Contention 25(a). The County Plan is deficient because it does not provide for relocation of the Coffey County Emergency Operations Center in the event that it becomes necessary to evacuate it. It is unlikely that people will want to remain in the Emergency Operations Center when other offices in the Courthouse have radiation levels that are unacceptable.

94. NUREG-0654 Criterion H.3. states "Each organization shall establish an emergency operations center for use in directing and controlling response functions."

95. The present County EOC is located in the basement of the County Courthouse, is totally below grade, and has a "protection factor" of 100. (FEMA Test., fol. Tr. 1731, at 167; Appls.' Ex. 1, § 4.1; Tr. 1174, 1287-90). (A protection factor of 100 means that an individual is 100 times as safe in the EOC as he would be if he was out of doors (Tr. 1289)). The new EOC (to be built adjacent to the present EOC) will have the same protection factor. (Tr. 678; Tr. 1289). This is an adequate "protection factor." (Tr. 2128; 1289). If radiation levels exceeded this "protection factor" and necessitated evacuation of the Coffey County EOC, everyone else in the plume exposure pathway EPZ would have been evacuated by that time, and thus there would be no further need for the EOC to continue operating. (Appls.' Test., fol. Tr. 194, at 164; Tr. 1172, 1174).

96. There is no requirement for a backup EOC either in NUREG-0654, or elsewhere. (FEMA Test., fol. Tr. 1731, at 167-68; Appls.' Test.,

fol. Tr. 194, at 163; Tr. 2125-26, 2177-78). However, Coffey County and Lyon County, at the invitation of the latter, have orally agreed that Coffey County could use the EOC in Emporia if it became necessary to evacuate the Coffey County EOC. Since the State of Kansas has designated the Lyon County EOC as the alternate to its own EOC, Coffey County considers the Lyon County EOC adequate in the event it had to utilize it. (Tr. 1172). Moreover, if necessary, Coffey County could use the State's EOC in Topeka or its personnel could go mobile and operate from radio-equipped vehicles. (Appls.' Test., fol. Tr. 194, at 163; Tr. 1172, 1175).

28. Dose Control For Emergency Workers.

Contention 28(a). The County Plan does not specifically detail how many dosimeters will be needed and what kind will be used.

Contention 28(b). There are not enough dosimeters for emergency personnel.

Contention 28(d). There is no plan specified for issuing dosimeters to County emergency workers.

Contention 28(e). The Radiological Defense Officer has not developed a system for controlling radiological exposure of emergency workers.

97. Coffey County currently has 314 self-reading dosimeters and will be provided with 250 thermoluminescent dosimeters (TLDs) by KG&E. Each of the approximately 225 Coffey County emergency workers (identified during the hearing by categories or classes and enumerated

in each category) will be provided with dosimeters.¹² (Appls.' Test., fol. Tr. 194, at 176, as corrected at Tr. 1396-97; Tr. 1454-55). FEMA believes the County Plan or the County Plan Implementing Procedures should categorize the emergency workers and set forth the numbers of workers in each category. (FEMA Test., fol. Tr. 1731, at 173, as modified at Tr. 2193).

98. Currently the County Plan Implementing Procedures state that the County Radiation Defense Officer will issue self-reading dosimeters, TLDs and monitoring equipment to members of the Radiation Monitoring Team upon their arrival, and that the Shop Foreman should issue self-reading dosimeters and TLDs to emergency workers (the road and bridge crew) dispatched from his shop. (FEMA Test., fol. Tr. 1731, at 176; Appls.' Ex. 6; Tr. 1500). However, the County Plan does not provide for the prepositioning of enumerated dosimeters for all the categories or classes set forth in footnote 12, below, and it is uncertain whether this information will be set forth in the Implementing Procedures. (Tr. 1500-03, 1507-10). FEMA will be satisfied if the

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These classes or categories of emergency workers and the number of personnel in each are: the Sheriff's Department (7); the Engineering Department (49); the EOC (11); the County Commissioners (5); the Shelter Systems Officer (1); the County Attorney (1); Public Information Office (1); the Health and Medical Team (4); the Coffey County Hospital (17); the Golden Age Lodge (21); the Joint Radiological Monitoring Team (13); ambulance drivers (16); funeral coach drivers (32); fireleaders and firemen (18); school bus drivers (29). (Tr. 1455).

Implementing Procedures, rather than the Plan itself, specified the prepositioning location, and the quantities and types of dosimeters. (Tr. 2198A-99).

99. The twenty-six individuals, who are needed to conduct radiation monitoring and decontamination for the host counties at the registration centers, should be provided with dosimeters. (Appls.' Test., fol. Tr. 194, at 123 and corrected at Tr. 1396; Appls.' Ex. 1, § 3.10; Tr. 1416-26; Tr. 2070-71, and Tr. 2195-96). The four host counties have 1056 self-reading dosimeters. (Tr. 1571).

100. As reflected in finding 24, supra, three agencies have jurisdiction over the John Redmond Reservoir. Kansas Fish and Game Commission personnel will have prepositioned dosimetry furnished by the State of Kansas, and KG&E will provide dosimetry to personnel of the U. S. Fish and Wildlife Service for prepositioning. (Tr. 1560; Tr. 1571-72). The record does not reflect either that the U.S. Army Corps of Engineers will provide its own dosimeters or that KG&E will provide them.

101. It is not known if the host counties and the three agencies in the Redmond Reservoir have established procedures for their workers to measure and record radiation levels. The Coffey County Radiological Defense Officer stated that these jurisdictions had this responsibility. (Tr. 1536-37). Upon issuance, self-reading dosimeters are accompanied by a record card and instructions for recording exposure. (Tr. 1514).

102. KG&E has TLDs stored at the plant site and, after supplying the County with 250 of them, will have a replacement reserve of 5750 TLDs. In the event of a high level of radiation at the site, there would be adequate time to secure replacements from neighboring nuclear plants or from commercial sources, or the Applicants could devise some method to transport the replacements away from the site. (Tr. 1522-24).

29. Training.

Contention 29(c). The Coffey County Emergency Preparedness Coordinator has not developed the training programs needed to implement the County Plan, and has not made adequate plans to familiarize Coffey County personnel with the plan and their responsibilities.

103. NUREG-0654, Criterion 0.1 advises "Each organization shall assure the training of appropriate individuals.

104. NUREG-0654, Criterion 0.4 provides that "Each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans.

105. Both State and County Plans provide for a Joint Training Program for emergency personnel, to be carried out by KG&E, the County and State. (FEMA Test. fol. Tr. 1731, at 181, 184-85; Appls.' Test. fol. Tr. 194, at 180). The course content is being developed and will be reviewed by the County, State, and KG&E. (Appls.' Test. fol. Tr. 194, at 182).

106. The County Plan contains a training matrix that identifies topics for each class of emergency worker. (Appls.' Ex. 1, Table 5-1 as modified at Tr. 1276-79). Two modules of the Joint Training Program

will familiarize County personnel with the County Plan and their responsibilities under it. (Appls.' Test. fol. Tr. 194, at 182). Initial training under the Joint Training Program, including these two modules, will be completed prior to the full-scale exercise. (Appls.' Test. fol. Tr. 194, at 189). FEMA finds that the County Plan meets the requirements specified in NUREG-0654 for development of training plans. (FEMA Test. fol. Tr. 1731, at 184-85; Tr. 2243-44).

Contention 29(g). The County Plan should specify in detail the type and amount of training that individuals will receive. The training to be provided to the positions listed in Table 5-1 should be specified in detail.

107. See findings 103 and 104, supra.

108 Table 5-1 in the County Plan presents a matrix describing the Joint Training Program. (Appls.' Ex. 1, Table 5-1). The Coffey County Emergency Preparedness Coordinator and the Manager, Radiological Environmental Assessment, KG&E have recommended certain revisions to the matrix involving type and amount of training for emergency workers. (Tr. 1276-79, 1629-35). FEMA is satisfied with these revisions to the County Plan. (Tr. 2243-44).

109. See finding 16, supra.

110. The U. S. Corps of Engineers and U. S. Fish and Wildlife Service employees at the John Redmond Reservoir will receive training in basic radiation effects and protection, overview of the State, County, and KG&E emergency plans, self-protection radiation monitoring, and the position role in the emergency plan. Kansas Fish and Game employees at

the reservoir will receive the same training plus training in radiation survey techniques. (Tr. 1635-36).

Contention 29(h). The following local personnel lack sufficient training to perform their assigned functions and should be trained in the identified areas:

- (1) The Coffey County Emergency Preparedness Coordinator. Advice to Sheriff about protective action to take; locating, storing, and distribution of emergency equipment; training personnel about evacuation duties and emergency equipment; have knowledge about radiation monitoring, decontamination processes, and use of protective gear; understanding duties of each person involved in the plan; conducting evacuation drills; training public about how to respond to an emergency; evacuation of people who lack transportation; implementing the guidelines to be used to determine when emergency workers should conduct activities that will result in exposures in excess of 25 REM.
- (2) Coffey County Commissioners.
- (3) Coffey County Clerk.
- (4) Coffey County Sheriff. Coordination of evacuation process; knowledge of plan to advise people about duties and how to implement their duties; training of personnel to conduct evacuations; conduct of evacuation plan drills; notification of radiological emergency; management of roadblocks and traffic control; security of evacuated area; evacuation of persons without transportation.
- (5) Coffey County Sheriff's Department personnel.
- (6) Coffey County Engineer. Cleaning and maintaining of roads in bad weather; operation of roadblocks and traffic control.
- (7) Coffey County Engineer's staff. Rescue functions.
- (8) Personnel of the Coffey County Road Department. Management and assistance at roadblocks.
- (9) The Burlington City Police Department and other police

departments within Coffey County. Giving of initial warnings; security of area after evacuation; traffic control, and management of roadblocks.

- (10) Personnel of the City of Burlington Fire Department and the personnel of other fire departments within Coffey County. Decontamination process at roadblocks and checkpoints; use of protective gear during the evacuation process.
- (11) Traffic control personnel.
- (12) Coffey County Health Officer.
- (13) Volunteer teams to provide medical care and first aid (to be trained by the County Health Officer).
- (14) Coffey County Health Nurse.
- (15) Nursing home administrators and staff.
- (16) Coffey County Hospital Staff. Evacuation of patients at hospital.
- (17) Coffey County Ambulance Service. Evacuation of patients at hospital and coordination of that duty with treatment of individuals injured in an emergency.
- (18) Radiological Defense Officer.
- (19) Coffey County Radiological Monitoring Team. Taking an evaluation of radiation levels; operation of radiological monitoring equipment; knowledge about allowable radiation dosages; use of protective gear.
- (20) Personnel assisting the Radiation Monitoring Team with radiation monitoring checks.
- (21) Shelter Leader.
- (22) Temporary Shelter Managers.
- (23) Shelter Managers.
- (24) Bus drivers. To assure that they will respond.
- (25) Personnel to perform confirmation of evacuation.

(26) Volunteers and other personnel yet to be recruited who will have responsibilities under the plan.

111. See finding 104, supra.

112. Training identified in the County Plan is under development and will be completed prior to the full-scale exercise. The following individuals will be trained in accordance with NUREG-0654 requirements. (Appls.' Test., fol. Tr. 194, at 189-190; Appls.' Ex. 1, Table 5-1, as modified at Tr. 1276-79). (The following numbering system is similar to that utilized in the contention).

1. Emergency Preparedness Coordinator (FEMA Test., fol. Tr. 1731, at 192-93).
2. County Commissioners. (Id., at 194-95).
3. County Clerk. (Id., at 196-197).
4. Sheriff. (Id., at 198-99).
5. Sheriff's Department. (Id., at 200-01).
6. County Engineer. (Id., at 202-03).
7. County Engineer's Staff. (Id., at 204-05).
8. The Coffey County Road Department. These individuals are part of the County Engineer's Staff. (Id. at 206-08).
10. Fire Department personnel. (Id., at 211-12; Tr. 2219).
11. Traffic control personnel. (FEMA Test., fol. Tr. 1731, at 213; Tr. 2220, 2225-26).
12. The County Health Officer. (FEMA Test., fol. Tr. 1731, at 214; Tr. 1276).
13. Volunteer teams for medical care and first aid. (FEMA Test., fol. Tr. 1731, at 215-16; Tr. 2227).
14. County Health Nurse. (FEMA Test., fol. Tr. 1731, at 217).

15. Nursing home personnel. (Id., at 218-19; Tr. 2227-28).
 16. Hospital Staff. (Ibid; FEMA Test., fol. Tr. 1731, at 220-21).
 17. County Ambulance Service. (FEMA Test., fol. Tr. 1731, at 222-23).
 18. Radiological Defense Officer. (Id., at 224).
 19. Radiation Monitoring personnel. (Id., at 225-26).
 20. Personnel assisting the Radiation Monitoring teams. (Id., at 227-28).
 21. Shelter Systems Officer. (Id., at 229-30).
 23. Host County Reception and Care Coordinators and staff. (Id., at 232).
 24. School bus drivers. (Id., at 233; Tr. 1630, 2228).
 25. County Engineer and staff performing evacuation confirmation. (FEMA Test., fol. Tr. 1731, at 234-35; See 6 and 7, supra).
 26. Volunteers and other personnel who will have responsibilities under the plan but have not yet been recruited. (FEMA Test., fol. Tr. 1731, at 236-37).
113. The following individuals will not receive training:
9. Police Departments within Coffey County. These individuals have no responsibilities in the County Plan. (Id., at 209-10; Tr. 661, 2218-19).
 22. Temporary Shelter Managers. The County Plan does not mention such individuals nor is it required to do so. (FEMA Test., fol. Tr. 1731, at 231).

114. Members of the Joint Radiation Monitoring Team and other radiation monitors will be selected and trained, including additional training for the Joint Radiation Monitoring Team to qualify them for

off-site monitoring and sample collection, prior to the full-scale exercise. (See finding 72, supra).

Contention 29(k). The training program does not adequately consider how to deal with changes in personnel and in volunteers who are trained. There will be a very substantial turnover that must be dealt with.

115. See findings 103 and 104, supra.

116. Both the County and State Plans provide for training of new emergency response personnel. (Appls.' Ex. 1, at 5-1; Appls.' Ex. 2, at 0-2). They will be trained using videotapes of appropriate portions of the Joint Training Program, and self-study materials, and will also be retrained periodically in the Joint Training Program, drills and exercises. (Appls.' Test., fol. Tr. 194, at 193; Tr. 891-92, 1182, 1640). Replacement personnel will receive substantially the same training as those trained originally. (Tr. 892, 1184, 1641). FEMA has found that these plans are consistent with the requirements of NUREG-0654. (FEMA Test., fol. Tr. 1731, at 240).

Contention 29 (q). The State does not have adequate plans to train State personnel having emergency responsibilities. The Bureau of Radiation Control is responsible for supporting and developing conduct of radiological emergency response training but has not established plans or courses for providing such training.

117. See findings 103 and 104, supra.

118. NUREG-0654 Criterion 0.5 states "Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities."

119. Applicants' witness testified that several changes will be made which will require additional training of State workers as listed

in Table O-1 of the State Plan. (Tr. 887-88, 918-19, 2266). The State reviews and updates its plan annually, including procedures. (Appls.' Ex. 2, at P-1). FEMA finds that State training plans are consistent with the criteria of NUREG-0654. (FEMA Test., fol., Tr. 1731, at 249-50).

Contention 29(s). The following State personnel lack sufficient training to perform their assigned functions and should be trained in the identified areas:

- (1) State Department of Emergency Preparedness personnel. Training of people involved in the plan and the conduct of emergency planning drills.
- (2) Kansas Department of Health and Environment personnel. Familiarity with State and Coffey County Plans, so can meet its primary and support responsibilities as specified in the State Plan.
- (3) Kansas Bureau of Radiation Control personnel. Determining existence of offsite contamination.
- (4) Kansas National Guard Unit in Burlington, Kansas. Management of roadblocks and traffic control; evacuation of nursing homes and others; use of protective gear.
- (5) Kansas Highway Patrol personnel. Responsibilities specified in the State Plan.
- (6) Kansas Department of Transportation personnel. Responsibilities specified in the State Plan.
- (7) Kansas Department of Social and Rehabilitation Services.
- (8) Kansas Fish and Game Commission personnel.

120. See findings 103, 104 and 118, supra.

121. The State Bureau of Radiation Control personnel have been trained and certified in the skills required for determining the existence of offsite contamination. (Appls.' Test., fol. Tr. 194, at

201-02). Otherwise, all initial training of State emergency workers, as specified in the Joint Training Program, will be completed prior to the full-scale exercise. (Appls.' Ex. 2, Table 0-1; Tr. 1623). As under Contention 29(q), the State training plans are consistent with the criteria of NUREG-0654. (See finding 119, supra; FEMA Test., fol. Tr. 1731, at 253-67; Tr. 887-88, 1636, 2231-36).

Contention 29(u). The following federal personnel lack sufficient training to perform their assigned functions:

- (1) U. S. Army Corps of Engineers personnel.
- (2) U. S. Fish and Wildlife Service personnel.

122. See findings 103 and 104, supra.

123. The U. S. Army Corps of Engineers and U. S. Fish and Wildlife Service emergency workers will receive training as part of the Joint Training Program. (Appls.' Test., fol. Tr. 194, at 204). Training will include basic radiation effects and protection, overview of the State, County and KG&E emergency plans, self-protection radiation monitoring, and position role in the emergency plan. (Tr. 1635). This provision removes concern that FEMA had about training of these personnel. (FEMA Test., fol. Tr. 1731, at 270-72; Tr. 2236). This training will be completed before the full-scale exercise, which is consistent with the requirements of NUREG-0654. (Tr. 1623). In addition to the training provided these agencies, Kansas Fish and Game Commission personnel, who may be involved with field sampling during emergencies, will receive training in radiation survey techniques. (Tr. 1635-36).

31. Resource Availability and Allocation.

Contention 31(c). The fire department of Burlington and other cities in Coffey County do not have radio equipment which is needed to communicate with the Sheriff's office.

Contention 31(d). The Coffey County Road Department needs radio equipment for its vehicles to communicate with the Sheriff and others in the event of an emergency.

124. NUREG-0654 Criteria E.2 and F.1 require that each organization shall establish procedures for alerting, notifying, and mobilizing emergency response personnel and shall establish reliable primary and backup means of communication.

125. Radio equipment that would allow the fire departments to communicate with the Sheriff's office and EOC is on order, and delivery is scheduled for spring of 1984. (Appls.' Test., fol. Tr. 194, at 212; Tr. 644, 1188-91, 1206-09, 1280). The proposed arrangements will satisfy the requirements of NUREG-0654. (FEMA Test., fol. Tr. 1731, at 282-83).

126. Radio equipment allowing Road Department vehicles to communicate with the Sheriff's office and EOC is on order, and delivery is scheduled for spring of 1984. (Appls.' Test., fol. Tr. 194, at 213; Tr. 644, 746-48). This plan will satisfy the requirements of NUREG-0654. (FEMA Test., fol. Tr. 1731, at 284-85).

Contention 31(f). Protection gear against radiation is needed for all workers who are involved in the evacuation plan. Three hundred fifty people will be involved in three shifts. If so, 116 sets of protective gear are required.

127. NUREG-0654 Criterion H.9 states "Each licensee shall provide for an onsite operations support center (assembly area) which shall have adequate capacity and supplies, including, for example, respiratory protection, protective clothing," Criterion H.11 advises that each plan shall, in an appendix, include identification of emergency kits by general category (protective equipment, communications equipment, radiological monitoring equipment and emergency supplies).

128. Protective clothing only protects against contamination, not radiation. (Tr. 2289). Consequently only field radiation monitoring team members, who could contaminate themselves while collecting environmental samples, might require protective clothing. (Tr. 1530, 2286, 2292, 2296-97). KG&E has 100 sets of protective clothing set aside for emergency workers whereas only 21 sets might be needed for the field monitoring teams. (Appls.' Ex. 1, § 3.10; Appls.' Test., fol. Tr. 194, at 214). Approximately 1900 additional sets are available at the plant site. (Tr. 2363). Criteria H.9 and J.6.b. of NUREG-0654 require an onsite support center that would have protective clothing and provisions for use of protective clothing by individuals present or arriving onsite during an emergency. There is no requirement that protective clothing also be available offsite.

CONCLUSIONS OF LAW

The Board has considered all of the evidence submitted by the parties. Based upon a review of the entire record in this proceeding and the foregoing Findings of Fact the Board concludes that:

1. the emergency plans meet the requirements of 10 C.F.R. § 50.47, and Appendix E to 10 C.F.R. Part 50, as well as the criteria of NUREG-0654, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency,

2. the issuance of an operating license to the Applicants will not be inimical to the common defense and security or to the health and safety of the public, and

3. pursuant to 10 C.F.R. § 2.760a and 10 C.F.R. 50.57, that the Director of Nuclear Reactor Regulation should be authorized to issue to the Applicants, upon making requisite findings with respect to matters not embraced in this Initial Decision, and subject to the satisfaction of the conditions set forth in the Order, infra, a license authorizing operation of Wolf Creek Generating Station, Unit No. 1.

ORDER

WHEREFORE, IT IS ORDERED, in accordance with 10 C.F.R. § 2.760a and 10 C.F.R. § 50.57, that the Director of Nuclear Reactor Regulation is authorized to issue to the Applicants, upon making requisite findings with respect to matters not embraced in this Initial Decision, a license authorizing the operation of the Wolf Creek Generating Station, Unit No. 1, provided that the following conditions have been met prior to the issuance of the operating license:

1. Letters of agreement shall be signed by Coffey County with hospitals in surrounding counties providing for the acceptance of patients from the Coffey County Hospital and the Golden Age Lodge Nursing Home in the event of an emergency evacuation occasioned by an accident at the Wolf Creek plant. These executed letters of agreement shall be submitted to the NRC Staff and shall be included in the Coffey County Plan.

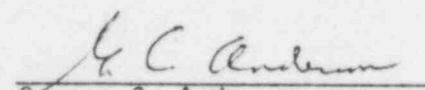
2. Letters of agreement shall be signed by Coffey County with ambulance services and with funeral directors in surrounding counties providing for the transportation of non-ambulatory patients from the Coffey County Hospital and from the Golden Age Lodge Nursing Home in the event of an emergency evacuation occasioned by an accident at the Wolf Creek plant. These executed letters of agreement shall be submitted to the NRC Staff and shall be included in the Coffey County Plan.

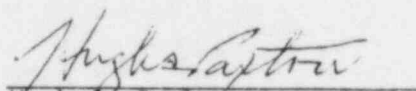
Pursuant to 10 C.F.R. § 2.760 of the Commission's Rules of Practice, this Initial Decision will constitute the final decision of the Commission forty-five (45) days from the date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. (See also 10 C.F.R. §§ 2.764, 2.785 and 2.786).

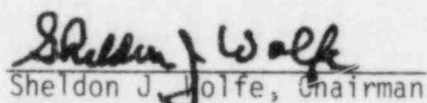
Any party may take an appeal from this decision by filing a Notice of Appeal within ten (10) days after service of this Initial Decision. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal, (forty (40) days if the Staff is the appellant). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants, (forty (40) days in the case of the Staff), a party who is not an appellant may file a brief in support of or in opposition to the appeal of any other party. A responding party shall file a single, responsive brief only regardless of the number of appellants' briefs

filed. (See 10 C.F.R. § 2.762 as amended December 19, 1983, 48 Fed. Reg. 52283 (November 17, 1983)).

THE ATOMIC SAFETY AND
LICENSING BOARD


George C. Anderson
ADMINISTRATIVE JUDGE


Hugh C. Paxton
ADMINISTRATIVE JUDGE


Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 2nd day of July, 1984.