

**TABLE 5.4.2.1-1.—Major Sources of Radiation Exposure in the  
Vicinity of the Hanford Site**

SOURCE OF EXPOSURE	DOSE TO AVERAGE INDIVIDUAL (mrem/yr) <sup>1</sup>	PERCENTAGE OF TOTAL EXPOSURE
<b>NATURAL BACKGROUND RADIATION</b>		
Cosmic and external terrestrial radiation	78	
Internal terrestrial	39	
Radon in home	200	
Total natural	317	83.2
<b>MEDICAL RADIATION</b>		
Diagnostic x-rays	39	
Nuclear medicine	14	
Total Medical	53	13.9
<b>OTHER SOURCES</b>		
Weapons test fallout	<1	
Consumer and industrial products	10	
Air travel	1	
Nuclear fuel cycle	<1	
Hanford Site - environmental radioactivity	.002	
Total other	11	2.9
Total - all sources	381	100

<sup>1</sup>Effective dose equivalent.

Sources: NCRP 1987:15, 53; DOE 1992e:139

handling the pits. The transfer of pits would result in worker doses of less than 2 person-rem per year for handling 2,000 pits and about 5 person-rem for the placement of 8,000 pits.

The combined worker dose from unloading and storage of 8,000 pits at FMEF would be 113 person-rem distributed over the 30 people directly involved in material handling. Assuming that the same 30 people continue to handle 8,000 pits over a period of 4 years and using a dose-to-risk conversion factor of  $4 \times 10^{-4}$  latent cancer fatality (LCF) per person-rem, there would be an additional 0.04 LCF in this group due to radiological exposure from pit handling.

The probability of LCFs from all causes in the general population is estimated at 20 percent, which implies that 6 of 30 workers would

develop a fatal cancer from all other causes. With an additional 0.04 LCF from pit handling, the total risk of latent fatal cancers among workers at the FMEF site would increase by 0.7 percent.

Storage of 8,000 pits could be accomplished at FMEF. Pit container inventories at the Hanford Site are expected to be performed using either shielded or automated techniques and equipment. Consequently, these normal operations are not expected to result in any significant radiological exposure to workers.

Other storage activities that may occur within the time frame evaluated in this EIS include:

- Restacking a limited number of pits to comply with design laboratory temperature requirements.