present and can be eliminated or lessened by a change in practices'' (*IUD* v. *API*, 448 U.S. at 642). The Court broadly describes the range of risks OSHA might determine to be significant:

> It is the Agency's responsibility to determine in the first instance what it considers to be a ''significant'' risk. Some risks are plainly acceptable and others are plainly unacceptable. If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2 percent benzene will be fatal, a reasonable person might well consider the risk significant and take the appropriate steps to decrease or eliminate it. (*IUD* v. *API*, 448 U.S. at 655).

The Court further stated, ''The requirement that a ''significant'' risk be identified is not a mathematical straitjacket * * *. Although the Agency has no duty to calculate the exact probability of harm, it does have an obligation to find that a significant risk is present before it can characterize a place of employment as ''unsafe''' and proceed to promulgate a regulation (*IUD* v. *API*, 448 U.S. at 655).

Table VII–1 presents the estimated excess risk of lung cancer associated with various levels of Cr(VI) exposure allowed under the current rule, based on OSHA's risk assessment and assuming either 20 years' or 45 years' occupational exposure to Cr(VI) as indicated. The purpose of the OSH Act, as stated in Section 6(b), is to ensure ''that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard * * * for the period of his working life.'' 29 U.S.C. 655(b)(5). Taking a 45-year working life from age 20 to age 65, as OSHA has always done in significant risk determinations for previous standards, the Agency finds an excess lung cancer risk of approximately 100 to 350 per 1000 workers exposed at the previous PEL of 52 μg/m^3 Cr(VI). This risk is clearly significant, falling well above the level of risk the Supreme Court indicated a reasonable person might consider acceptable. Even assuming only a 20-year working life, the excess risk of about 50 to 200 per 1000 workers is still clearly significant. The new PEL of 5 μg/m^3 Cr(VI) is expected to reduce these risks substantially, to below 50 excess lung cancers per 1000 workers. However, even at the new PEL, the risk posed to workers with a lifetime of regular exposure is still clearly significant.

Table VII-1: Expected Excess Lung Cancer Deaths per 1000 Workers

	Cr(VI) Concentration, ug/m^3	*20-year Exposure*	*45-year Exposure*
Previous PEL:	52	43 - 198	101 - 351
	20	17 - 83	41 - 164
	10	9 - 43	21 - 86
New PEL:	5.0	4.3 - 22	10 - 45
	1.0	0.85 - 4.4	2.1 - 9.1
	0.5	0.43 - 2.2	1.1 - 4.6
	0.25	0.21 - 1.1	0.53 - 2.3

Workers exposed to concentrations of Cr(VI) lower than the new PEL and for shorter periods of time may also have significant excess cancer risk. The Agency's risk estimates are roughly proportional to duration for any given exposure concentration. The estimated risk to workers exposed at any fixed concentration for 10 years is about one-half the risk to workers exposed for 20 years; the risk for five years' exposure is about one-fourth the risk for 20 years. For example, about 11 to 55 out of 1000 workers exposed at the previous PEL for five years are expected to develop lung cancer as a result of their exposure. Those exposed to 10 μg/m^3 Cr(VI) for 5 years have an estimated excess risk of about 2–12 lung cancer deaths per 1000 workers. It is thus not only workers exposed for many years at high levels who have significant cancer risk under the old standard; even workers exposed for shorter periods at levels below the previous PEL are at substantial risk, and will benefit from implementation of the new PEL.

To further demonstrate significant risk, OSHA compares the risk from currently permissible Cr(VI) exposures to risks found across a broad variety of occupations. The Agency has used similar occupational risk comparisons in the significant risk determination for substance-specific standards promulgated since the benzene decision. This approach is supported by evidence in the legislative record that Congress intended the Agency to regulate unacceptably severe occupational hazards, and not ''to establish a utopia free from any hazards''(116 Cong. Rec. 37614 (1970), Leg. Hist 480), or to address risks comparable to those that exist in virtually any occupation or workplace. It is also consistent with Section 6(g) of the OSH Act, which states:

> In determining the priority for establishing standards under this section, the Secretary shall give due regard to the urgency of the need for mandatory safety and health standards for particular industries, trades, crafts, occupations, businesses, workplaces or work environments.

Fatal injury rates for most U.S. industries and occupations may be obtained from data collected by the Bureau of Labor Statistics. Table VII–2 shows average annual fatality rates per 1000 employees for several industries between 1992 and 2001, as well as projected fatalities per 1000 employees for periods of 20 and 45 years based on these annual rates (Ex. 35–305). While it is difficult to compare aggregate fatality rates meaningfully to the risks estimated in the quantitative risk assessment for Cr(VI), which target one specific hazard (inhalation exposure to Cr(VI)) and health outcome (lung cancer), these rates provide a useful frame of reference for considering risk from Cr(VI) inhalation. Regular exposures at high levels, including the previous PEL of 52 μg/m^3 Cr(VI), are expected to cause substantially more deaths per 1000 workers from lung cancer than result from occupational injuries in most private industry. At the new PEL of 5 μg/m^3 Cr(VI) the Agency's estimated range of excess lung cancer mortality overlaps the fatality risk for