

Title	HSL 2004/004: Human vulnerability to thermal radiation	
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Executive Summary	<p>This report examines the consequences of exposure of offshore workers to differing levels of thermal radiation. It is considered that the consequences of such exposure are best determined using a dose / time relationship rather than exposure to particular levels of thermal radiation. During the preparation of this report several existing thermal radiation harm criteria and their scientific bases were reviewed. It was found that several factors, critical to offshore personnel injury, were not considered when developing most of the harm criteria currently used by offshore operators as part of their hazard assessment. These factors have been considered in this report and have led to a new estimation of the lethal dose required to cause 50% fatality.</p> <p>Harm criteria have been estimated in dose units rather than setting limiting radiation levels in order to take account of the increased harm caused by intense, short duration radiation. In addition, recommending probit models of harm has been avoided both because of uncertainty of the dose-harm curve and in order to emphasise particularly important specific levels of harm at 1-5%, 50% and 100% fatality. LD50 is 2000 Thermal Dose Units ((kW/m²)⁴/3.s) and it is recommended that this criterion be adopted across the offshore oil and gas industry.</p>	
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