In conducting its evaluation, the Office considered the relationship between accuracy (Criterion 1) and public safety. While accuracy contributes significantly to assuring public safety and is important to developing public and consumer confidence, the Office considered whether there are circumstances in which intentional reentry can occur and public safety is assured without the demonstrated level of accuracy required by Criterion 1. Next, the Office considered whether these circumstances would, in fact, occur in carrying out the METEOR reentry mission. Finally, the Office considered whether, if Criterion 1 is waived, additional measures are appropriate to ensure that public safety is protected.

The Office has determined that there are circumstances in which the relationship of reentry vehicle accuracy to public safety becomes less significant. The three criteria were developed to have a mutually reinforcing effect on public safety. Although their objectives are interrelated, they were designed so that Criterion 1 can compensate if the ability of the reentry vehicle system to meet Criteria 2 and 3 is marginal, and vice versa. Stated another way, the probability of a casualty is, among other things, a function of the probability of missing the landing site. Other contributing factors include the size and mass of the vehicle upon impact, its contents, and the population distribution in the area where the vehicle could impact if it missed the designated landing site. For example, if a reentry vehicle is extremely small and contains no hazardous materials, the probability of a casualty during a reentry would be quite low, even if the vehicle had little probability of landing in the designated site. However, the probability of a casualty could be high if that vehicle were quite large, contained explosives or hazardous materials, or if the vehicle was likely to impact in a densely populated area if it missed the designated landing site. Thus, under certain conditions, it may be possible to relax or eliminate an accuracy criterion if the risk to public safety remains within acceptable levels. They are as follows:

- If it can be shown that there are well-defined areas within which the vehicle is most likely to land if it misses the designated landing site, and that the risk to the population within these areas is within acceptable limits;
- If it can be shown that the vehicle, if it misses the designated landing site, is unlikely to survive rentry or is likely to reenter in a condition that presents little risk to exposed populations because it contains little mass, no hazardous materials, or both; or
- If it can be shown that risk mitigation measures (e.g., public notices or warnings, emergency response plans) can be implemented to limit the risk to exposed populations to acceptable levels in the event the vehicle misses the designated landing site.

To determine whether any of these circumstances will exist for METEOR, the Office analyzed a broad range of failure scenarios that may occur when a human-induced or intentional reentry occurs. In conducting risk scenario analyses, the Office used a conservative approach in that it did not consider the mitigating effects of a parachute system built into the reentry vehicle to soften landing impacts.

In the event of a minor system error or failure, such as one that alters the aerodynamic characteristics of the vehicle as it descends, the Office determined that the dispersion area or ''footprint'' within which the vehicle would be expected to land would most likely be enlarged, shifted, or both. The vehicle would still land in the general vicinity of the landing site, that is, within the 100-mile zone. Given EER's designated landing site in the Atlantic Ocean, the 100-mile zone around the designated landing site is principally ocean area or some sparsely populated land areas. Based on dispersion, vehicle break-up and other risk analyses, the Office determined that risk to public safety would remain well within the threshold of normal background risk identified in Criterion 2.

In the event of a major system failure which causes a random reentry, such as severe misalignment of the vehicle during retroburn resulting in insufficient thrust to deorbit along the desired trajectory, the Office determined that the only population placed at risk would be those persons residing along the orbital path, or ground trace, of the final orbit. This area occupies a swath approximately 20 miles wide and extending approximately 3,000 miles beyond the designated landing site. The area is so limited because of the limited cross-range capability of the vehicle. Because of the inclination of the orbit and the designated landing site, most of this ground trace is over uninhabited broad ocean. The effect of alignment or burn errors increases very rapidly with the magnitude of the error, so that if the METEOR reentry vehicle travels beyond 3,000 miles from the intended landing site it will remain in space for more than one orbit. Although the ground trace includes some areas of the United States, the likelihood of landing on land is small, given that most of the ground trace is over ocean. Moreover, the areas of the United States in which the reentry vehicle could land are relatively sparsely populated and, based on dispersion, vehicle break-up and other risk analyses, the Office found that risk to public safety would remain within the threshold of normal background risk identified in Criterion 3.

A gross failure that causes the vehicle to remain on orbit for more than one orbit after the intended reentry need not be considered under the vehicle safety criteria. Nevertheless, the Office evaluated the risks associated with a gross failure and determined that risk to public safety still would remain well within the threshold of normal background risk identified in Criterion 3. In fact, the Office determined that an intact reentry module that impacted on earth or the reentering debris from the reentry of the entire vehicle system (the reentry vehicle joined to the service module) would be smaller than, and therefore pose less risk than, the debris believed to survive the reentry of large abandoned satellites or spent upper stages of Titan, Atlas, and Delta launch vehicles.

Accordingly, the Office has determined that there are circumstances in which intentional reentry of METEOR can occur and public safety will be assured without the demonstrated level of accuracy required under Criterion 1, and that these circumstances do, in fact, exist for METEOR. There are well-defined areas within which the reentry vehicle is most likely to land if it misses the designated landing site. The risk to the population within these areas falls within acceptable limits. The small size and mass of the reentry vehicle and the lack of hazardous materials on the vehicle would minimize the potential risk to public safety if it misses the designated landing site. Moreover, under certain failure scenarios, the reentry vehicle would break up and reenter in small bits of debris, much of which would likely burn up as it passes through the atmosphere.

The Office has concluded that, in light of the performance characteristics of the METEOR reentry vehicle, the proposed mission including an oceanic landing, the small size of the reentry vehicle and the absence of hazardous materials on the reentry vehicle, public safety and U.S. national interests would not be jeopardized if the landing accuracy (Criterion 1) is waived. However, as a condition of the waiver, the Office is requiring that EER implement a public information communications plan under which the affected public would be informed of