government-owned large ALWR costs would range from $1.5 billion to $3.5 billion, and 2) for a privately financed large ALWR costs would range from $0.7 billion to $5.0 billion. These amounts include revenue from electricity sales.

In summary, the purchase of irradiation services is the lowest cost in all categories and has the lowest uncertainty. The other commercial options have the lowest cost estimates for TLCC both with and without revenues, and for TPC but with a higher degree of uncertainty. The APT, small ALWR, and small advanced HWR make up a middle group with approximately similar discounted mean costs for TLCC without revenue, and TPC. The small ALWR and small Advanced HWR have smaller uncertainties than the APT in both these categories. TLCC with revenue shows the small ALWR to have a lower mean cost than the APT or the small advanced HWR and adds the large ALWR to this middle group. The large ALWR is in the higher mean cost group for TLCC without revenue and for TPC, along with the MHTGRs and HWR, which also have higher uncertainties. The O&M analysis shows that the purchase of irradiation services has clearly the lowest mean cost, with all other alternatives grouped together. The uncertainties for all the alternatives generally have a substantial overlap in their cost distributions.

Evaluation of Site Alternatives

The five sites for new tritium supply and recycling facilities were evaluated with respect to environmental impacts and cost. Two criteria emerged as discriminators: (1) Ability to handle low-level radioactive waste; and (2) cost. No siting analysis was needed for the commercial reactor options, since they all currently exist, and any reactor ultimately selected would have to undergo a separate NEPA review.

Numerous environmental impacts were examined in the Final PEIS. The analysis either showed very small or no impacts, or the impacts did not differentiate among sites including cancer risks from a severe accident. Impact differences are primarily due to the differences in the size of the population within 50 miles of the site. Because cancer risk is low for all sites, it is not a discriminator between sites. The cost estimates for site alternatives are published in the Technical Reference Report.

The results of the evaluations are summarized in Table 3 and described below.

TABLE 3.—SITE EVALUATION

Criterion site	Ability to dispose of wastes on site	Cost of adding non-evaporative cooling (reactors only)[a]	Percent adjustment to base cost site (INEL) due to site differences	
			Construction (percent)	Operation & maintenance (percent)
INEL	Yes	$86 to $208	0	0
NTS	Yes	99 to 239	5	15
ORR	Yes	0	5	0
PANTEX	No	98 to 239	−10	15
SRS	Yes	0	0	10

[a] Mean discounted cost in millions of 1995 dollars, using a 4.9% annual discount rate.

1. *Ability to Handle Wastes.* As shown in column 2 of Table 3, with the exception of Pantex, all sites can dispose of low level radioactive waste on site. The wastes from Pantex would be shipped to an approved off site low level radioactive waste disposal facility.

2. *Cost.* The results of the cost comparisons are shown in Table 3. Cost differences among sites are determined by three major factors:

(1) The cost for the non-evaporative cooling system needed at sites which do not have ample water availability (this does not apply to the APT, which is not designed to use non-evaporative cooling),

(2) The percentage differential in construction costs (primarily because of labor rates), and

(3) The percentage differential in operation and maintenance costs (primarily because of labor and electricity rates).

The third column of Table 3 shows the range of additional costs due to the need for non-evaporative dry cooling for reactors at INEL, NTS, and Pantex. The high end of these costs would occur for the large ALWR.

The fourth and fifth columns of Table 3 show the percent increases in cost of construction, and operation and maintenance over the least expensive site (INEL). For construction, Pantex shows a decrease, SRS shows no change, and NTS and ORR show small increases. Operation and maintenance costs are higher at NTS and Pantex than INEL, with SRS higher than INEL but less than NTS and Pantex. ORR shows the same cost to INEL. These differences are fairly small compared to the large uncertainties in the actual costs of the facilities.

Evaluation of Tritium Recycling Alternatives

If a new supply facility is chosen at INEL, NTS, ORR, or Pantex, the alternatives are to build a new recycling facility collocated with the supply facility or to upgrade the SRS facility. Constructing a new tritium recycling facility (1.9 to 2.1 billion dollars) is more expensive (between $500 million and $750 million) than upgrading existing tritium recycling facilities (1.3 billion) at SRS. The operational environmental impacts would be similar.

If a new supply facility is chosen at SRS or if a commercial reactor option is chosen, upgrading the existing tritium recycling facility is the only option considered, since building a new recycling facility at another site is more expensive and has no other advantages.

Cumulative Impacts

Impacts from the siting, construction, and operation of new tritium supply and recycling facilities would be cumulative with impacts from existing and planned facilities and actions at the five candidate sites. The consequences of each new tritium supply alternative and recycling alternatives include the cumulative effect of tritium supply and recycling impacts and impacts from existing, planned, and reasonably foreseeable operations. Other more long-term impacts associated with the Department's proposed Environmental