There are 99 nuclear power reactors in the United States producing about one-quarter of the country’s electricity. But around each plant is a 50-mile ring that could be heavily contaminated by radiation should a leak occur. We know this because the US Nuclear Regulatory Commission (NRC), the government’s regulatory agency, has explicitly warned that in a serious accident “much of any particulate material in a radioactive plume [will be] deposited on the ground within about 50 miles of the facility.”[1]

History demonstrates that radiation causes cancer, especially in children. That’s why all nuclear reactors have complex safety controls and redundant systems designed to contain the danger. But should the unexpected occur, millions of people will need to take radiation-protective measures, including immediate evacuation and the use of potassium iodide (KI). These tablets are the final defense if everything else fails. They block radiation absorption in a power-plant accident, and protect against most radioactive fallout expected from the use of a nuclear weapon. In volume, the tablets cost just pennies.

The government knows they work. That’s why the NRC distributes KI to individuals living near nuclear facilities. But although the cancer threat extends for at least 50 miles, only those living within 10 miles actually get the pills. The NRC explains this by assuring us that “life-threatening doses [of radiation] would generally not occur” beyond ten miles.[2]

But this comforting statement is misleading. “Life-threatening” radiation doses (measured in thousands of REM) do not cause cancer. They kill before cancer can develop. Cancer is caused by doses as low as 5 REM,[3] a level that could be seen for many tens of miles downwind in a power plant accident, or for hundreds of miles in the fallout from a nuclear weapon.

The NRC, of course, knows this, but remains opposed to stockpiling enough KI for everyone. Their reasoning, as internal documents describe, is the fear that a large stockpile would “remind people of nuclear reactor accidents”—while limiting KI “implies that the risks are low.”[4] Therefore, to avoid negative publicity, our government has decided to “put its resources into cure rather than prevention.”[5] Should an accident happen, officials hope everyone within 50 miles can evacuate, lessening the need for KI.
Evacuate millions of people? It’s a strategy that’s neither reasonable nor feasible. Everyone should be protected. The objective should be to protect people—not the reputation of the nuclear industry.

KI’s value is proven. It was distributed following Chernobyl, with the NRC reporting that absorbed radiation levels among children “were lower than would have been expected had this prophylactic measure not been taken.”[6] The New York Times reported that “children lucky enough to be given potassium iodide largely escaped harm.”[7] But thousands of unlucky children (those outside the Chernobyl distribution area) developed cancer at epidemic rates due to the unique vulnerability of the thyroid to radiation. In fact, the NRC reported that ten years after the accident, “except for thyroid cancer, there has been no confirmed increase in the rates of other cancers.”[8]

Safety experts were not surprised. The FDA has stated plainly that when used with other common-sense measures “KI can provide safe and effective protection against thyroid cancer caused by irradiation.”[9] Other groups, such as the American Thyroid Association, the American Academy of Pediatrics, The National Academy of Sciences, the World Health Organization, and many others, all support KI. Our military has enough for its short-term needs in the event of a nuclear attack, but not nearly enough for the public, and there is virtually none in the country’s pharmaceutical Strategic National Stockpile.

Although the nuclear industry pretends that an accident would not threaten anyone beyond 10 miles, comprehensive NRC analyses puncture this optimism. Multiple studies[10,11] predict high radiation exposures (more than 100 times safe levels) and indicate that what happened at Chernobyl—where more than 90% of the childhood cancer victims were located more than 30 miles downwind[12]—could happen here.

Though no method to assure nuclear safety is perfect, having KI for protection is a strategy that has considerable merit. The realistic threats our country faces from nuclear weapons, terrorism, or a reactor failure, clearly indicate that KI is a prudent and good-sense response to real-world dangers. That’s why the decision to essentially ignore the tablets should be seriously reviewed.

Current KI policy is based on politics and public relations, not science or medicine. Numerous studies (see below) confirm the value of the tablets, and to the NRC’s credit, they have repeatedly pointed out the danger of the country remaining unprotected. Indeed, as a former NRC Chairman has stated, “Evacuation [at Chernobyl] and the use of potassium iodide would have significantly reduced the incidence of thyroid cancer”. He called the failure to distribute KI to everyone a “callous disregard by the former Soviet Union for its people” and a “failure of a society to take care of its people.”[13]

Surely America can do better than that.

ANBEX

Radiation Protection

For more information on potassium iodide, go to www.KIFacts.com. To purchase potassium iodide, go to www.anbex.com. To contact your elected representatives to ask them to support KI stockpiling for EVERYONE, click on the following:

US Senate: https://www.senate.gov/senators/contact/
Sources:


[4] Excerpts from the transcript of a Staff Briefing held November 22, 1983 to senior NRC personnel regarding NUREG/CR-1433 (see below), an NRC study which found that the consequences of a nuclear accident would be much worse than expected. This internal staff document has not been released publically.


**U.S. NUCLEAR REGULATORY COMMISSION**

Expected Radiation Dispersion in the Event of a Nuclear Reactor Accident
Results from Two Studies

FROM: NUREG/CR-1433 (Prepared by Sandia National Laboratories for the NRC):
Examination of the Use of Potassium Iodide (KI) as an Emergency
Protective Measure for Nuclear Reactor Accidents

Expected Effects of Core-Melt Atmospheric Accidents by Distance
(Combined Tables 3 and 4)

<table>
<thead>
<tr>
<th>Distance from Reactor (In Miles)</th>
<th>Mean Thyroid Dose (REM) for Exposed Adult</th>
<th>Probability of Thyroid Damage to Exposed Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13,800</td>
<td>60%</td>
</tr>
<tr>
<td>5</td>
<td>6,800</td>
<td>70%</td>
</tr>
<tr>
<td>10</td>
<td>3,200</td>
<td>70%</td>
</tr>
<tr>
<td>25</td>
<td>1,100</td>
<td>40%</td>
</tr>
<tr>
<td>50</td>
<td>380</td>
<td>13%</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>3%</td>
</tr>
<tr>
<td>150</td>
<td>36</td>
<td>1%</td>
</tr>
<tr>
<td>200</td>
<td>16</td>
<td>.5%</td>
</tr>
</tbody>
</table>

**NOTE:** For children, increase dose and probability of damage by an approximate factor of two

An Analysis of Potassium Iodide (KI) Prophylaxis for the
General Public in the Event of a Nuclear Accident

Expected Effects of Core-Melt Accidents with Atmospheric Release
(Table 4-8)

<table>
<thead>
<tr>
<th>Distance Interval (Miles)</th>
<th>Child Dose</th>
<th>Adult Dose</th>
<th>Average Person Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>38,000</td>
<td>9,550</td>
<td>20,000</td>
</tr>
<tr>
<td>5-10</td>
<td>14,500</td>
<td>3,600</td>
<td>7,300</td>
</tr>
<tr>
<td>10-25</td>
<td>3,450</td>
<td>865</td>
<td>1,800</td>
</tr>
<tr>
<td>25-50</td>
<td>575</td>
<td>145</td>
<td>300</td>
</tr>
<tr>
<td>50-100</td>
<td>135</td>
<td>34</td>
<td>70</td>
</tr>
<tr>
<td>100-150</td>
<td>62</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>150-200</td>
<td>38</td>
<td>9</td>
<td>19</td>
</tr>
</tbody>
</table>

**NOTE:** Nuclear Regulatory Commission Guidelines call for “Protective Actions” (KI) when radiation dose to the thyroid exceeds 3 to 5 REM
TWO HUNDRED MILE ZONES AROUND U.S. NUCLEAR PLANTS

SOURCE: USNRC