



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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April 21, 1980

Mr. Joe Deal  
Environmental Protection  
Mail Stop E-201, GTN  
Department of Energy  
Washington, DC 20545

Dear Mr. *Joe*

We have received information from the Omnidine Corporation describing an alternative to the potassium iodine (KI) thyroid blocking agent to be used in the event of a nuclear emergency resulting in the release of radioiodine to the atmosphere. A copy of the letter from Omnidine describing the device is attached.

We will be following the results of the FDA application and want to insure that you are aware of the Omnidine research.

Sincerely,

A handwritten signature in cursive script that reads "Harold R. Denton".

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Enclosure:  
Letter from Omnidine  
dtd. 2/15/80

February 15, 1980

Dr. John Ahearne, Commissioner  
Nuclear Regulatory Commission  
1917 H Street, NW  
Washington, D.C. 20555

Dear Dr. Ahearne:

I am writing to you at the suggestion of Frank von Hippel, Ph.D., nuclear physicist at the Center for Environmental Control, Princeton University. Dr. von Hippel mentioned to me that you would be interested in learning of the iodine device I have designed for Omnidine Corporation as the alternative to potassium iodide (KI) as an emergency source of thyroid blocking agent in the event of nuclear mishap with radioactive iodine ( $^{131}\text{I}$ ) release to the atmosphere.

The Omnidine device (patent pending) is based on the controlled, minimal solubility of elemental iodine ( $\text{I}_2$ ) in water: 300 mg/l @  $20^\circ\text{C}$ . It consists of a squeezeable bottle, dispensing tip, extended overcap and contains pure iodine crystals in a special retainer. The device generates "free" or molecular, diatomic iodine, recognized by thyroidologists as an effective thyroid blocking agent.

As you are aware, KI tablets have been criticized in that iodine availability or potency must be checked on a periodic basis. Published reports show cost estimates of \$100,000,000 annually for potency evaluation, nationwide. And, even with potency established at a particular date, there exists the possibility of iodine loss between then and the next check. Should iodine be required for thyroid blocking due to an emergency during the interim, thyroid protection could be lacking.

The materials used in the Omnidine device have been selected for compatibility with iodine. Material compatibility combines with iodine's limited water solubility to produce an extremely important effect: the Omnidine device has a virtually unlimited shelf life in storage. The iodine in the device is ever ready for use when necessary. Therefore, the periodic checking costs for KI potency are completely obviated, resulting in highly significant program cost savings.

Additional savings are provided, too. I have frequently heard the KI initial cost figure quoted at 50 cents per person, or \$2.00 for a family of four. In quantity, the Omnidine device can be supplied at a cost very much less expensive than KI tablets.

Yet another benefit is available with use of the Omnidine device. During nuclear emergency, it is quite likely that electricity in the area served by the nuclear power plant will be curtailed drastically or cut off. Municipal water supplies will therefore be subject to lapses in disinfection protection, thereby raising the problem of water-borne diseases. The same condition applies to private and farm wells dependent on municipal power.

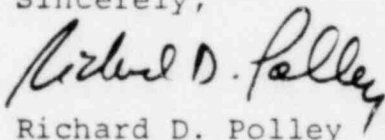
The efficacy of elemental iodine as a broad-spectrum water disinfectant is very well established. Liquid "free" iodine dispensed from the device into a container of water rapidly renders the water potable for family use in drinking and cooking. This important benefit is simply not available with KI.

Another interesting aspect of the Omnidine unit is that in dispensing liquid iodine, it is simple and easy to correctly supply the reduced iodine dose requirements for infants and small children. Obviously, it is difficult and dangerous to attempt administration of a tablet to an infant. Certainly, the KI tablet could be broken and dissolved in liquid prior to feeding, but there is little doubt that during a nuclear emergency many people will panic. Under traumatic circumstances, the difficulty of administering KI tablets to the very young could produce untoward results, including overdosing.

Omnidine is now preparing to submit application to FDA for permission to make the demonstrable, desirable benefits of its device available to the American public. Should you be interested, we will be pleased to keep you informed of our progress.

Please feel free to contact me at Omnidine for any additional information you may require.

Sincerely,



Richard D. Polley  
President

RDP/rs

PS: As you are aware, FDA requires daily adult dosing of 100 mg I<sup>-</sup> from KI. Current thyroid research indicates that this dose is significantly higher than that actually required to inhibit thyroid uptake of <sup>131</sup>I. I'll be pleased to forward this information when it becomes available.

cc: Dr John Kemeny, Dartmouth Univ.      Chairman Hendry, Nuclear Regulatory  
    Senator Gary Hart, U.S. Senate          Commission  
    Representative Morris Udall, U.S.      Commissioner Gilinsky, NRC  
        House of Representatives          Commissioner Kennedy, NRC  
    Senator Paul Tsongas, U.S. Senate      Commissioner Bradford, NRC  
    S.H. Ingbar, M.D., Harvard Medical  
        School