

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL

Before the Licensing Board:

E. Roy Hawkens, Chair
Dr. Michael F. Kennedy
Dr. William C. Burnett

In the Matter of)
) Docket No. 52-040 and 52-041
Florida Power & Light Company)
)
Combined License Application for)
Turkey Point Units 6 & 7) April 18, 2011

EXHIBITS FOR CASE AMENDED CONTENTIONS 1,2 & 5

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Exhibit 1 - [Japanese government admits potassium iodide pills should have been distributed earlier](#) (2 pages, whole document)

Exhibit 2 – Guidance Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies U.S. Department of Health and Human Services Food and Drug Administration Center for Drug Evaluation and Research (CDER) December 2001 (12 pages, link:)

www.fda.gov/.../GuidanceComplianceRegulatoryInformation/Guidances/ucm080542.pdf - [Similar](#)

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EXHIBITS

From Introduction: Food and water poisoned by Japanese nuclear leak as expert warns more could die than in Chernobyl

by [Susie Boniface](#), [Sunday Mirror 20/03/2011](#)

The crisis in Japan deepened yesterday as food and water were found to be poisoned with lethal radiation, raising the threat of mass food shortages. Crops up to 75 miles from the damaged Fukushima nuclear plant were found to be unsafe to eat, and tap water in greater Tokyo – home to 30 million people – has also been contaminated by fall-out.

The scale of the disaster continued to grow, with 452,000 homeless, 11,000 missing and 7,300 dead from the March 11 tsunami. Firefighters were still battling to bring leaking nuclear reactors -under control.

Yesterday an earthquake measuring 6.2 struck near the crippled power plant, causing further damage and hampering efforts to restore electricity in the hope of restarting the cooling systems which could avert nuclear disaster.

One expert predicted that the death toll in the years ahead could top the 500,000 attributed to the Chernobyl accident of 1986 and warned that panicked repair attempts could lead to an even greater disaster. John Large, a British nuclear engineer, said: “The Japanese don’t know how to deal with it. They’re ad-libbing.

“Just throwing water on to the reactors, when they cannot get inside to see what the situation is, could mean the fuel goes critical again.

“And while the radiation leak so far is only a tenth of that at Chernobyl, that was in a rural area with a low population. In Japan it’s an urban, densely packed area so the potential numbers of deaths and cancers are much higher.”

Read more: <http://www.mirror.co.uk/news/top-stories/2011/03/20/food-and-water-poisoned-by-japanese-nuclear-leak-as-expert-warns-more-could-die->

than-in-chernobyl-115875-23001856/#ixzz1Jt8jZRjj

Exhibit 1 - [Japanese government admits potassium iodide pills should have been distributed earlier](#)

Mike Adams
[Natural News](#)
March 21, 2011

A Japanese nuclear safety official has now publicly admitted the Japanese government improperly withheld potassium iodide from the public for three days following the Fukushima power plant explosion. Kazuma Yokota says the Japanese government was “caught off guard” by the nuclear catastrophe and didn’t realize its people needed potassium iodide until three days later.

Associated Press distributed this statement, which has been carried by hundreds of mainstream news organizations:

“A Japanese nuclear safety official, Kazuma Yokota, acknowledged that the government only belatedly realized the need to give potassium iodide pills that help reduce chances of thyroid cancer to those living within 12 miles (20 kilometers) of the nuclear complex.”

This explanation defies logic, of course. How can a person whose job is to assure the safety of the nuclear industry not realize that an exploding nuclear power plant might be dangerous to its people? This should have been the very first action item made public: Take your potassium iodide! A nuclear plant has just exploded, and radiation is leaking into the environment... what to do?

That the explosion at Fukushima did not trigger an immediate announcement for people to take potassium iodide is yet more evidence of Japanese government incompetence or perhaps even a cover-up. It’s almost as if the government didn’t want people to think the explosion was a big deal, so they downplayed the whole scenario and didn’t bother to warn people to take action. Encouraging people to take potassium iodide might have “frightened” them, they probably figured.

[Stock up with Fresh Food that lasts with eFoodsDirect \(AD\)](#)

If that sounds familiar, it's probably because President Obama has taken exactly the same non-action in the United States, too. Last week, he publicly urged people to do nothing to prepare against the very real possibility of radioactive fallout reaching California

(http://www.naturalnews.com/031735_O...).

When it comes to taking intelligent action following this nuclear catastrophe — which already ranks as the second worst nuclear accident in the history of human civilization — our governments all earn an “F” grade. Because they failed to warn the citizens to take precautionary steps, and in doing so, they are setting in motion a sequence of events that will get people killed.

Thousands of cases of future cancers may be attributable to the radiation already emitted from Fukushima. Had the Japanese government acted sooner, some of those cancers might have been avoided with potassium iodide.

That's what the substance exists for, after all. If you don't use it following a nuclear power plant explosion, then why have it at all?

We will be fortunate, indeed, if the Fukushima nuclear power plant situation is resolved without further radiation leaks. A close brush with nuclear catastrophe, no doubt. One lesson we can all learn from this is that those who wait for their governments to tell them what to do may pay for their lack of action with their lives.

Sources for this story include:

<http://www.washingtonpost.com/world...>

<http://www.ft.com/cms/s/0/c19ed90e-...>

Exhibit 4 - : Fukushima evacuees denied care over radiation concern

By Julian Ryall in Tokyo

Thursday March 31 2011

HUNDREDS of people evacuated from towns and villages close to the stricken Fukushima nuclear plant are being turned away by medical clinics and shelters over fears of radioactive contagion.

Hospitals and temporary refuges are demanding that evacuees provide them with certificates confirming that they have not been exposed to radiation.

The situation at the plant remains critical, with the Nuclear and Industrial Safety Agency saying that radioactive iodine-131 at more than 3,350 times permitted levels had been found in a sample of seawater taken from near the plant.

The water is the most highly contaminated sample yet taken from the sea and indicates that radiation from the core of one or more of the reactors, where fuel rods have partially melted, is leaking into the Pacific.

A spokesman for the agency said the radioactivity posed no immediate threat to human health because fishing had been banned close to the plant and iodine would be "significantly diluted" before it came into contact with marine species and entered the food chain.

Takayuki Okamura, who lives in Minamisoma, said his eight-year-old daughter was refused treatment for a skin rash by a clinic in Fukushima City, where the family is in a shelter after abandoning their home, which is 18 miles from the nuclear plant.

"Just being forced to live in a shelter causes us anxiety," said Mr Okamura (49).

"The institution's refusal to treat my daughter came as a great shock."

Medical experts have condemned those who turn away evacuees. "This is a knee-jerk reaction based on the fear that these people are going to harm you," said Dr Robert Gale, a haematologist at Imperial College, [London](#), who is advising the Japanese government on health issues.

"If someone has been contaminated externally, such as on their shoes or clothes, then precautions can be taken, such as by removing those garments to stop the contamination from getting into a hospital," he said. "That is very easy to do, but unfortunately I'm not surprised this sort of thing is happening."

Prejudice against people who live near the plant recalls the ostracism experienced by survivors of the atomic bombings of [Hiroshima](#) and Nagasaki in 1945.

Many suffered discrimination when they tried to rent housing, find employment or marriage partners.

More than 65 years ago, Dr Gale pointed out, far less was known about the effects of radiation on the human body. He said it was "completely irrational" to turn evacuees away.

Masataka Shimizu, the president of [Tokyo Electric Power Company \(TEPCO\)](#), which owns the plant, has been admitted to a hospital to be treated for [hypertension](#) and dizziness.

TEPCO is reportedly offering up to ¥400,000 (€3,417) a day for anyone willing to work at the plant. Employees are being described in the Japanese media as modern-day samurai or "suicide squads". (© Daily Telegraph, London)

- Julian Ryall in Tokyo

Irish Independent

<http://www.independent.ie/world-news/asia-pacific/fukushima-evacuees-denied-care-over-radiation-concern-2601963.html>

Exhibit 5

Shelters starting to require radiation-free 'certificates'

Mar 27 2011

FUKUSHIMA —

At the entrance of a sports gymnasium in Fukushima city earlier this month, a doctor wearing a white hat, mask and gloves was seen holding a **radiation** monitor over the hands of a visiting resident.

The doctor then held it over the person's forehead, abdomen and back. The resident was then asked to raise their heels to check the back of the shoes at the end of the procedure to get a reading on the monitor.

After the series of problems at one of the country's largest nuclear power plant, these **radiation** screenings have been conducted at the entrance of shelters in Fukushima Prefecture since March 13, two days after the devastating quake and **tsunami** crippled the Fukushima Daiichi nuclear plant. They are intended to check if a resident has been exposed to

radiation. — "Certificates" are then issued by the doctors to those who have been declared free of any abnormality.

But these certificates have come to be an unexpected function in the community that has become nervous about anything radioactive. Some shelters have started demanding that certificates be presented before any residents evacuating from the nuclear disaster are admitted.

Some officials in the central government, however, are raising their eyebrows about such documentation while demand for them appears to be growing. According to prefectural officials, there are about 30 screening teams each

comprising around three people, including a doctor and a radiology technician.

By March 24, about 88,000 people have been screened, they said. Of them,

98 showed readings of over 100,000 counts per minute—a yardstick level

that requires “decontamination” procedures.

A local official said, “Second readings done after they were asked to take off their clothing or undergo some other steps were lower than the yardstick.

There have been no cases where health has been impacted.”

But increasingly alert about radiation levels, shelters across the prefecture have started making it a requirement for residents to obtain such a certificate to show that they have gone through the screening, if they ever want to be allowed in the shelters.

via [Radiation-free ‘certificates’ in Fukushima get unexpected role > Japan](#)

Today: [Japan News and Discussion](#).

**Exhibit 6 - Travel Warning: Japan (Updated March 18, 2011)
Natural Disasters East Asia & Pacific > Japan 3/19/2011 U.S.
Department of State released the following Travel Warning on
March 18, 2011:**

The U.S. Department of State warns U.S. citizens of the deteriorating situation at the Fukushima Daiichi Nuclear Power Plant. The United States Nuclear Regulatory Commission (NRC) recommends that U.S. citizens who live within 50 miles (80 kilometers) of the Fukushima Daiichi Nuclear Power Plant evacuate the area or take shelter indoors if safe evacuation is not practical. The State Department strongly urges U.S. citizens to defer travel to Japan at this time and those in Japan should consider departing. On March 16, 2011, the Department of State authorized the voluntary departure from Japan of eligible family members of U.S. government personnel in Tokyo (Tokyo Capital Region), Nagoya (Aichi Prefecture), Yokohama (Kanagawa Prefecture), and the prefectures of Akita, Chiba, Fukushima, Gunma, Ibaraki, Iwate, Miyagi, Nagano, Niigata, Saitama, Shizuoka, Tochigi, Yamagata, and Yamanashi. Separately, because of infrastructure damage from the earthquake and resulting tsunami, voluntary authorized departure is authorized for the eligible family members at Misawa AB (Aomori Prefecture). This Travel Warning replaces the Travel Warning dated March 16, 2011.

In response to the deteriorating situation at the Fukushima Daiichi Nuclear Power Plant, the United States Nuclear Regulatory Commission (NRC), the Department of Energy, and other technical experts in the U.S. Government have reviewed the scientific and technical information they have collected from assets in country, as well as what the Government of Japan has disseminated. Consistent with the NRC guidelines that would apply to such a situation in the United States, we are recommending, as a precaution, that U.S. citizens within 50 miles (80 kilometers) of the Fukushima Daiichi Nuclear Power Plant evacuate the area or to take shelter indoors if safe evacuation is not practical.

There are numerous factors in the aftermath of the earthquake and tsunami, including weather, wind direction, and speed, and the nature of the reactor problem that affect the risk of radioactive contamination within this 50-mile (80-kilometer) radius or the possibility of low-level radioactive materials reaching greater distances. For the latest U.S. Government information on the situation in Japan, please go to the Department of State's Consular Affairs' website. Information about nuclear radiation exposure risks can be obtained from the Nuclear Regulatory Commission and from the Centers for Disease Control.

As a result of this assessment, the State Department has authorized the voluntary departure from Japan of eligible family members of U.S. government personnel assigned to the U.S. Embassy in Tokyo, the U.S. Consulate in Nagoya, the Foreign Service Institute Field School in Yokohama and the prefectures of Akita, Aomori, Chiba, Fukushima, Gunma, Ibaraki, Iwate, Miyagi, Nagano, Niigata, Saitama, Shizuoka, Tochigi, Yamagata, and Yamanashi. U.S. citizens should defer all travel to the evacuation zone around Fukushima Daiichi Nuclear Power Plant, areas affected by the earthquake and tsunami and tourism and non-essential travel to the rest of Japan at this time.

Commercial flights have resumed at all airports that were closed by the earthquake, except Sendai Airport, and commercial seats are available at the time of this posting. In Tokyo, most public transportation including trains and subways are operating. Many roads have been damaged in the Tokyo area and in northern Japan, particularly in the Miyagi prefecture where government checkpoints have been established on damaged roadways. In Iwate Prefecture, toll road highways are restricted to emergency vehicles only.

The Department of State is working to assist U.S. citizens to depart from affected

areas. U.S. citizens in Tokyo should review our Japan Earthquake/Pacific Tsunami webpage for updated departure-related information.

Hardships caused by the March 11 earthquake and tsunami continue to cause severe difficulties for people in the areas affected by the disaster. Temporary shortages of water and food supplies may occur in affected areas of Japan due to power and transportation disruptions. Telephone services have also been disrupted in affected areas; where possible, you may be able to contact family members using text message or social media such as Facebook or Twitter.

Rolling power outages continue in the Tokyo Metropolitan area and areas in northeast Japan affected by the earthquake and tsunami. The Tokyo Electric Power Company reports that three-hour outages may occur in various regions, including Tokyo. Please monitor the Tokyo Electric Power Company website, and local news media for specific information and schedules for the planned outages. Radio stations in the Tokyo area that have emergency information in English include the U.S. Armed Forces station at 810AM and InterFM (76.1FM).

Strong aftershocks are likely for weeks following a massive earthquake such as this one. The American Red Cross recommends that in the event of aftershocks, persons should move to open spaces away from walls, windows, buildings, and other structures that may collapse, and should be alert to the danger of falling debris. If you are indoors, DROP, COVER, AND HOLD ON: If possible, seek cover under a sturdy desk or table, hold on, and protect your eyes by pressing your face against your arm. If there is no table or desk nearby, sit on the floor against an interior wall away from windows, bookcases or tall furniture that could fall on you. Avoid damaged buildings and downed power lines. Great care should be used with matches, lighters, candles, or any open flame due to the possibility of disrupted gas lines.

Due to the continuing possibility of strong aftershocks, Japan remains at risk for further tsunamis. Japanese authorities have issued a warning for people to stay away from low-lying coastal areas. If a tsunami alert is issued by Japanese authorities, evacuate immediately to higher ground. Further information about what you can do if a tsunami occurs can be found at the National Weather Service's TsunamiReady website, and the International Tsunami Information Center's website. Current tsunami alerts can be found at the Japan Meteorological Agency website, and the website of the Pacific Tsunami Warning Center.

The U.S. Embassy continues to deploy consular assistance teams where needed; these teams are actively working with our taskforce and local authorities to locate U.S. citizens, visit shelters and assistance centers, and help U.S. citizens identify public and commercial transportation options away from affected areas. U.S. citizens requiring emergency consular assistance should contact the Department of State via e-mail or through the emergency contact numbers below. U.S. citizens in Japan should contact family and friends in the United States to confirm their well-being at the earliest opportunity. Where internet and telephone services are not available, it may be possible to contact people using SMS (Cell text message) or other forms of social media such as Twitter and Facebook.

U.S. citizens in Japan are encouraged to enroll in the Smart Traveler Enrollment Program (STEP). U.S. citizens without internet access may enroll directly at the U.S. Embassy or U.S. Consulates. By enrolling, U.S. citizens make it easier for the Embassy/Consulates to contact them in case of emergency.

Updated information on travel and security in Japan may be obtained from the Department of State by calling 1-888-407-4747 toll-free in the United States and Canada or, for callers outside the United States and Canada, a regular toll line at 1-202-501-4444. For further information, please consult the Country Specific Information for Japan, as well as the Worldwide Caution.

Exhibit 7 - 10 Mile EPZ and probability shenanigans.

PLANNING BASIS FOR THE DEVELOPMENT OF
STATE AND LOCAL GOVERNMENT
RADIOLOGICAL EMERGENCY RESPONSE PLANS
IN SUPPORT OF
LIGHT WATER NUCLEAR POWER PLANTS

On page I-37 the report states:

“Given a core melt accident, there is about a 70% chance of exceeding the PAG [Protective Action Guides] doses at 2 miles, a 40% chance at 5 miles, and a 30% chance at 10 miles from a power plant. That is, the probability of exceeding PAG doses at

10 miles is 1.5×10^{-5} ”

Let’s just look at the last two lines: **and a 30% chance at 10 miles from a power plant. That is, the probability of exceeding PAG doses at 10 miles is 1.5×10^{-5}**

The first half of that statement states that there are **3 chances in 10** of

exceeding the PAG doses at 10 miles. (nearly 1 in 3)

The second half states that the chances of exceeding the PAG doses at 10

miles is 0.000015 or 1.5×10^{-5} as written above. Another way of stating that

is “15 chances in 100,000.” Still another way is **1 chance in 6,667** of exceeding the PAG doses at 10 miles.

So why the difference?

Because they multiplied the “3 in 10 chances” by the probability of a core

melt accident as listed on page I-9.

Here’s the math. I’ve color coded the figures to help understand where they come from.

(mathematical representation of 3 in 10 chances) $.3 \times 5 \times 10^{-5}$ (as given on page I-9)

$.3 \times 5 \times 10^{-5} = 1.5 \times 10^{-5}$ (The probability as listed in the statement)

SO this mathematical statement says that the odds for any given year of exceeding the PAG dose limits at 10 miles at US plants due to a core melt accident is 15 chances in 100,000 or 1 chance in 6667. That number will satisfy a lot of governmental planners but is very misleading.

“Probability” is not how we plan emergency responses. In order to plan for evacuations, we assume that one has occurred. The probability then is 1 chance in 1; a certainty

Therefore the math looks like this:

(mathematical representation of 1 in 1 chances) $1 \times .3$ (mathematical representation of 3 in 10 chances)
 $1 \times .3 = .3$ the real chances of exceeding the PAG doses at 10 miles if a core melt accident is occurring. Now that number should cause emergency

planners to order an evacuation.