About 2400 words

Dr. Nazari's Journal

October 24, 2032

Decades of research and development have led to this day. At 12:35pm tomorrow, the Schell-Nazari generator powers on. We've taken all the necessary precautions, of course, but the tests have been promising to say the least. We've laid the connections to the power grid already and, pending a successful ignition, we are prepared to take on the burden of powering the whole state. Current estimates suggest an output of nearly 200,000 TWh each day the generator runs. The current power consumption of Alaska is near 10 TWh, which puts the strain on the reactor well within our calculated limits.

Should a meltdown occur, we are prepared to reduce our mass by 70% before we go critical. This decrease should bring the blast area below 90 miles, hopefully leaving Ruby,

Kaltag, Takotna, and Lake Minchumina relatively unscathed, with radiation levels well within acceptable bounds.

Further updates pending completion of initialization.

October 25, 2032

Success! The world's first nuclear fusion reactor has been activated and currently provides power to the state of Alaska. Power fluctuations are negligible and structural stability of the core remains viable. All proceeded without issue.

On another note, several staff members reported difficulty entering the premises due to a high concentration of religious zealots and doomsayers without the facility. This is slightly concerning, however a small contingent of the national guard has been dispatched to hold the border of the facility against any especially violent protestors. This was to be expected. Any great leap in scientific advancement is likely to come with fear and apprehension. The world at large will learn not to fear this new power just as they did electricity, the automobile, and nuclear fission before.

November 2, 2032

The novelty has already begun to wear off and the protestors are backing off. Of course, they still remain active on the internet, tagging the Institute with every magazine article and scientific paper that voices anything that could remotely be seen as a criticism of fusion power. I see nothing to worry about. All measurements remain firmly within the established parameters and power continues to flow at an even pace.

Still, Washington is getting antsy and has asked us to fire back on these smear campaigns against us. Schell has bravely taken on the role of the face of our facility in the last few days. She said something about an interview with Stephen Colbert and Neil deGrasse Tyson, then she's heading off to CNN, Fox, and CBS. I'm glad she has the fortitude for this kind of pandering, as I find it utterly exhausting. However, I find that I have missed her view on things here over the past few days. A few of our students have begun research on a project that will increase our power output and our range. It appears very promising. With any luck, this time next year we will be the premier source of energy within the continental US.

May 13, 2033

We have had to pause on the Jordan Expansion for the time being. Our breakthrough in nuclear fusion last year has led to countless new technological developments which had previously been limited by power supply. We have been struggling to keep up with demand and have found it necessary to pull all of our researchers into keeping the station running on efficiently and safely. Our last few weeks of output show that the rate of increase in demand is slowing, and we hope that by next year we will be able to again put resources into expansion.

I worry though. The need for our expansion is already in doubt. In December of last year the Yeltz Facility went online in Siberia, leading a figurative explosion in the number of facilities like ours across the world. Already the HER Reactor powers much of the east coast, with the Bryce Powerplant in Utah slated to come online in August and Indiana's Boilermaker Station powering up in early September. I suppose it was wishful thinking that we would be able to expand to the mainland before the competition caught up.

January 4, 2034

It is precisely as we feared. We completed development of our secondary and tertiary reactors just as the Gates Reactor came online in California. Billions of dollars, thousands of hours, and hundreds of petawatts blasted into the void just like that. On the bright side, we are now prepared for the next several decades of increasing demand for power. Schell and I have instructed the facility to run the auxiliary generators at minimum capacity; we don't want to overcharge the system again. We're already responsible for paying for millions of homes whose systems were blown out due to the influx of power.

I must remind myself to save my unsavory criticisms of Gates for my personal journal.

July 17, 2034

Schell is a godsend. Over the past two years, she has managed to decrease negative sentiments towards our facility by 95%. I suppose the other generators coming online should receive some measure of credit, however she has remained the most vocal supporter of mainstream nuclear fusion in the US. Due to her efforts, she has drastically decreased the time it took for the world to accept this advancement. At least on this front, we can expect smooth sailing.

May 20, 2035

The launch of Microsoft X has finally afforded us the chance to utilize our auxiliary generators to their ideal capacity. Though I am elated at the chance to show off the genius of my former students, I can't help but worry at the alarming rate at which demand is increasing. Our previous estimates showed us keeping up with demand for at least two decades, however, current

estimates show a need for expansion within five years. Schell has already assigned some of her best to find a solution for the issue.

March 30, 2038

Our students have once again proven to be the best in the world. They have successfully synthesized the fabled Flerovium-298^{-12}. They've called it adamantium. A bit cheeky if you ask me, but I didn't discover it. The ionization of Ad gives it a very high melting point of nearly 4,000K and its elemental stability rivals even hydrogen. In layman's terms: it's indestructible.

We've begun construction on an adamantium shell surrounding the reactor. This will allow us to push the mass near the point of singularity. Should it begin to destabilize or collapse, we have designed a single access hatch which is programmed to shut at any sign of danger, disconnecting the reactor from the power grid and sealing it off entirely. Should a singularity occur, we are confident that the adamantium shell should hold firm until it burns out. In this event, we are prepared to seal off the entire facility and leave warnings and documentation sufficient to deter even the most inane of trespassers.

December 31, 2038

Another successful launch. Schell oversaw the final preparations while I calibrated our sensors. Our parameters have been tightened considerably. The slightest mistake could lead to an overload or a singularity and we have no desire to test the stability of our adamantium shell against a black hole. Our team has been completely retrained in preparation for this expansion, and each class has been overseen by either Dr. Schell or myself. Pressure from the EPA has been

a constant as we are in the middle of a protected area and the risk of overload is ever present. Given a month of stability the pressure should ease.

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I was briefly called away by a student. We're shutting the reactor down for observation. Alaska's power grid is shifting to the Juneau Power Complex, which we've been assured can handle the load. The tribal shamans in the area are inciting a panic among the spiritual community here, and we need time to calm their nerves. The sky above the Schell-Nazari Reactor has turned red.

February 3, 2039

The past month has been a veritable shitstorm of bad PR and public outlash. We have been so concerned with developing adequate safety measures that we failed to consider the consequences of the ever increasing gravitational pull of the reactor. As we approach critical mass, the impact will inevitably worsen. I have assigned Jordan and her team to research what we can expect as time goes on. Our further expansions must wait for now. Schell is in Washington again, standing before a congressional inquiry. Never have I been more grateful for her force of will.

Still, I worry. The world has grown to rely wholly on the energy from the fusion reactors around the world. If we are forced to shut down, millions, if not more, will die, and the global economy will be crippled. I'm no economist, but I would be surprised if we didn't face another depression, worse than the Economic World War, and the Great Depression by a magnitude of

ten. Hopefully Schell and Jordan will be successful in assuaging fears. Otherwise, we're finished.

February 21, 2039

There is no good news. HER, Bryce, and Gates have caught up with us. The sky sits in a permanent twilight above each of the power stations, and similar phenomena have been reported across Japan, Russia, Singapore, and Switzerland. The rest of the world surely isn't far behind. Schell has managed to postpone our senate hearing until after Jordan's team finishes their models. I wish I had more to say, but, for now, we have naught to do but play the waiting game.

March 4, 2039

Jordan has finished her model and the findings are grim. The fusion reactors are gradually increasing the atmospheric pressure at a constant acceleration. In other words, with each passing day, we move quicker towards catastrophe. This, of course, we already knew. Barometric readings over the past several weeks have shown as much and support both Jordan's findings and her timeline.

Of course, the effects of barometric pressure have been well documented. Still, we were hopeful that the rate at which the pressure was increasing would be more parabolic than linear. Those hopes are gone.

Jordan has been creating a computer model that simulates Earth as the atmospheric pressure increases in addition to researching the atmosphere of Venus. Thankfully, the atmospheric composition of Venus differs greatly from our own, meaning that we will avoid the terrifying acidic effects of Venus. However, her model shows that we may very well still face an

extinction level threat. She has outlined the effects of increasing barometric pressure in order of when they will occur. Her presentation was quite impressive, thus I will conclude my journal with her assessment of the situation.

Note: All broadcasted findings assume a constant rate of rising mass of fusion reactors worldwide, and a resulting constant rate of increasing pressure. Timeline assumes a margin of error of approximately thirty days.

1. Two months ago - The increased pressure of the atmosphere caused increased diffraction of sunlight, decreasing its frequency as it collided with the molecules in the air. This effect is normally seen as the sun approaches the horizon and results in a red sky
2. One month from now - The atmosphere will reach equilibrium. From this point on, the gravitational pull of the fusion reactors casts a proverbial net around the world, meaning that relative barometric pressure remains constant around the world. The permanent twilight becomes everpresent.
3. Six months - Increased pressure causes ears to pop worldwide. Those with preexisting inner ear conditions may experience some pain. Those with preexisting breathing conditions may face mild asphyxiation at sea level.
4. One year - Changes in elevation of more than 300m per hour may lead to extreme inner ear pain, bleeding, and, in the worst cases, blown eardrums. Headaches and sinus issues become more prevalent when changing elevation. Drastic changes in elevation may lead to extreme nosebleeds and ruptures of the eyes, as well as decompression sickness or high-pressure nervous syndrome. Life at sea-level becomes more difficult. Children and those with preexisting breathing conditions may face severe asphyxiation and death.

5. 18 months - Life below 1500m is practically impossible. Pressure suits and oxygen tanks are necessary for travel below this point. At this point, the rate of increase of barometric pressure begins to slow.
6. Two years - The atmospheric pressure at sea level increases past the threshold of most buildings. Coastal cities are leveled under the force of the atmosphere. Exploration of these areas without pressurized gear causes near instantaneous death. Life below 1700m is practically impossible.
7. Three years - Atmospheric pressure stabilizes. Life below 2000m is practically impossible. 97% of the Earth's landmass is uninhabitable. Estimated 99% casualty rate.

This simulation represents a best-case scenario. Any reactor that lacks an adamantium will go critical as the increased density will rupture casings of any other material and cause a chain reaction which will result in the total annihilation of the Earth. This reaction is projected to take anywhere between 1μs and 1as, depending on the mass of the reactor.

The Earth will then become a small star which will immediately be torn apart due to its own internal force, unleashing an explosion similar in mechanics to a supernova, though much smaller in magnitude. However, the brief spike in gravitational force will destabilize the orbits of both Venus and Mars, pulling them into an eventual collision course which will expel debris that will most likely result in the total destruction of the rocky planets.

Conclusion: Our imagination far exceeded our grasp. The creation and continued expansion of nuclear fusion reactors has directly caused the destruction of our planet. Unless we can sever our reliance on nuclear power and safely shut down every reactor currently in

operation, the human race will cease to exist. If this is achieved, the atmosphere will regain equilibrium with the Earth's natural gravitational force within a year.

However, my team and I are of the opinion that our best chance of survival is the MAYFLOWER project proposed by the United Nations Space Exploration Agency. The Earth is bound for disaster, our destiny lies among the stars.