Nuclear a large share of the world’s

Nuclear Power: ConsSince the days of Franklin and his kite flying experiments, electricityhas been a topic of interest for many people and nations. Nuclear power hasbeen a great advance in the field of electrical production in the last fiftyyears, with it’s clean, efficient and cheap production, it has gained a largeshare of the world’s power supply. However with the wealth of safer alternativesources of electricity, the dangers involved with nuclear reactors to humans (ie. cancer) and past disasters such as Chernobyl there are well based reasons not topursue this energy source. New sources such as fusion power, new studiesconcerning the health of nuclear by-products and scares of nuclear accidentslike those at Chernobyl are slowly rendering Nuclear Fission an obselete energysource. This essay will prove that nuclear power is a dangerous technology andwith many other sources and the dangers involved, the disadvantages of nuclearpower far outweigh the benefits.

Alternative sources of energy are making their way into the highlycompetitive field of electricity production. With the wealth of sources such assolar, wind, hydro or geothermal the dangers involved with fission could besolved by adopting these newer, safer methods. A main source of energy thatcould lead the way for the near future is solar energy. It is clean efficientand is already a large part of American and Canadian electricity production.

“ Solar energy already supplies about 6% of the nation’s U. S. A energy … theindustry is still in an embryonic stage, and opportunity exists for increasingthis contribution by ten times from current levels.

” (Maidique, 92) It isobvious that solar power will become a large part of the electricity productionaround the world. With future expansion and newer solar cells, the powerproduction could be increased to about 60-70% of the U. S.

A’s needs. Cold fusion will most surely be the newest type of energy leading usinto the 21st century, producing energy that is cheaper, safer and easier togenerate then any existing source. “ Fusion fuel releases a million times moreenergy then does burning a comparable weight of coal or oil; one teaspoon ofdeuterium, obtained cheaply from H20, contains the equivalent of 300 gallons ofgasoline; a mere 1000 pounds of deuterium could fuel a 1000-megawatt powerstation for a year.” (Dean, 84) Such spectacular figures sound unbelievable. Using a thousand pounds of a substance to supply a 1000-megawatt power stationfor a year, such figures will cause plummeting electricity prices and makefission plants far too expensive. However, prices and efficiency are useless if the safety factor isabandoned.

All three topics are dealt with in fusion, that is why it is such amiracle. In fact, a meltdown in a fusion reactor is impossible, which cannot besaid for fission. “ Compared with fission reactors the absence of such fissionproducts as radioactive iodine and cesium from the fusion cycle reduces thepotential hazard by more then a thousand-fold.” (Dean, 84) This is accomplishedbecause in a fission reactor the fuel is formed in a solid form which must becooled by water, and if water is unavailable then a meltdown may occur. In afusion reactor the fuel is a hot gas rather then a solid. Because of this evenwith a complete loss of cooling the gas would cool as it hits the cold walls ofthe reactor chamber.

With future resources, some proven like solar othersexperimental such as fusion, there is a wealth of possible energy sources. However, new sources of energy will not reduce the risk of horrificfission disasters such as those at Chernobyl or Three Mile Island. Pastdisasters such as Three Mile Island are well- based reasons to reconsidernuclear technology. At the Chernobyl power station at 1: 00 am on April 25, 1996reactor number 4 was running smoothly. The engineers performed a standard teston the turbo generators (Engine that turns to produce electricity.) At 1: 20amthe operator turned off the emergency cooling system. “ The sharp temperatureincrease in the reactor core, the rupture of the cooling channels (releasingsteam on to the red-hot graphite moderator, producing water gas) and thechemical reaction between overheated zirconium canning and water — (releasinghydrogen) ignited by the fireworks of flying hot and glowing fragments producedby the steam explosion — resulted in the explosion.” (Trainer, 116) As the twohuge steam explosions tore the core apart, the force of the blast lifted thethousand ton cover lid above the core.

Lethal radiation was being released intothe air. The explosion gave of more radiation then two atomic bombs dropped onHiroshima and Nagasaki combined. The accident is an awful reminder that andexplosion may not be only a freak occurrence. It so happens that it may becaused by other errors such as human blunder, low water supply or computerglitch, any misfunction may cause horrific problems. The Ukraine poisoned western Russia and almost all of Europe with thenuclear explosion at Chernobyl. Within the first six days, radiation sweptacross Europe. Radiation levels were higher as far west as Paris.

Many peoplewere infected with cancer or radiation poisoning. “ It was predicted that over21, 000 people of the region’s infected would die within 50 years from directcause of the explosion, however total death will range to around 100, 000 withinfifty years.” (Megaw, 87) Not only is the original explosion deadly, but theinsuing radiation can leave an area useless, killing or poisoning many plants, animals and humans. With a half-life (half-life is the period of time duringwhich half of the nuclei in a quantity of radioactive material undergo decay) ofmillions of years the land will suffer for a period of equal time, as willhumans.

The explosion at Three Mile Island was a shock to people who said anaccident could never happen in the U. S. A. Three Mile Island was located on anisland near Harrisburg, Pennsylvania on the Susquehanna River. At around 4am onMarch 28, 1979, an accident involving reactor number 2 occurred at Three MileIsland.

Although Public health was not so much threatened, an inquiry donerevealed such operator incompetence that it affected the whole of AmericanPolicy on Nuclear Power. When a water pressurizer, designed to keep water at a325oC burst causing insufficient cooling. Due to this some nuclear waste fromthe station had to be vented to reduce steam.

This was done successfully and thehazard was controlled. “ Ground level gamma dose rated at the site boundaryreached levels of 25 millirem per hour during the morning, as compared to theregular 0. 2 millirem per hour measured regularly.” (Zipko, 90) Since theaccident the American Nuclear Council (ANC) as well as many other countries haveinstalled a second

emergency pressurizer, it is feared however that in anextreme water pressurizer burst the emergency reaction system would not activate.

The workers at Three Mile Island, were lucky. Although never in risk of a coremeltdown, as in Chernobyl, a more serious water leak could have causedinstability and may have called for much more venting then occurred. Moreventing may have caused incurable pollution to the surrounding area. Theaccident that occurred on Three Mile Island proves that a nuclear accident doesnot only occur in the “ safety impaired” Russian reactors. Nuclear power is on whole a clean and efficient source of power, howeverthe aftereffects of already used materials are much more deadly then the processof fission itself.

There are many issues brought to life by nuclear fissionreactors, probably the most important is its detrimental effect on humans, plants and animals. It has been known for many years the nuclear waste causesmany sicknesses including cancer. This effect however, does not form during theprocess of fission itself.

Rather it is a slow release of poisonous radioactivewaste into the environment over periods up to 7 billion years. In smallquantities, the body can absorb radioactive waste, but with ever- growing shareof world power production being fission based it may be responsible for adramatic rise in cancer since the dawn of the nuclear age. Some “ scientistsbelieve that nuclear industry by the year 2000 could increase the level ofradiation by up to 3 percent, which would add about 7000 fatal cancers per yearto a world population of 4 billion.” (Kaku, 82) Considering 7000 deaths out of 4billion

people, it seems like a very high price to pay for what can be currentlydone safely. Even coal, a very dirty fuel does not contribute to cancer as muchas radioactive waste produced by fission.

In fact, a child living in closeproximity to a fission reactor is fifty times as likely of forming a type ofcancer such as leukemia or glaucoma, as opposed to one living close to a coalburning power plant. These numbers are blinding, coal power produces many moreimmediate deaths due to illnesses such as chronic bronchitis or emphysema. Thesesicknesses do occur and should be looked at, (in another essay) however theycannot be compared to a serious disease such as cancer, which may be passedgenetically and for which there is no immediate cure.

“ She a mother probablyis very unhappy to learn that her child living near a fission power plant is ata 0. 5 percent chance of dying of cancer over a periodic exposure.” (Taylor, 155)A 0. 5 percent exposure is equal to a 1 in 200 chance of developing the disease. The thought of a nuclear power reactor located near a large city such asHarrisburg, Pennsylvania (site of Three Mile Island) where the exposure isreleased to thousands of people is unthinkable but does occur due to companyprofit needs. Radiation is not only spread through the air we breathe.

It is alsopassed from plants we eat and water we drink. In areas such as Chernobyl thathave had even the mildest nuclear problems (obviously Chernobyl was not a mildproblem) we see an area in diameter around Chernobyl reaching as far as Kiev(400km) to have plants that are permanently inedible due to enormous radiationlevels. Unfortunately the

radiation is not in the plants, it is in the soil, alayer of soil that will spread harmful radiation for the next 7 billion years. These plants should not be eaten, however many poor families have no choice andmay not be aware they are poisoning themselves. Neither the animals nor thepeople eating them know that they are being poisoned. It is more surprising thatareas in the U.

S. A have to measured with abnormally higher radiation, it must bementioned these areas are located in relatively close proximity to a fissionpower plant. In addition, “ wind and rain erosion wash nuclear waste into streamsand rivers, poisoning the waters, killing the fish and eventually threateninghumans throughout the water they drink.

” (Kronenwetter, 48) The passage ofnuclear waste directly from the power plant to the soil, (which poisons plants)run- offs from the land which go into the water affecting both the poisonedwater we drink and the contaminated food we eat, not to mention the air that webreathe. These are scary facts that must no longer be overlooked in the name ofprofit. Nuclear power is a major pollutant and must be recognized as one.

In the 1990’s we have many alternatives to Nuclear Power. Solar, wind, hydro and geothermal are all great sources that should be used to limit the useof nuclear power. Although nuclear power on the whole is a clean and efficient, it has many unnecessary drawbacks such as the waste it produces, this willcontinue to poison humans, plants and animals. With all the choices available topeople, why not choose a clean or renewable source of energy, one without thedangers of radioactive waste and possible core meltdowns.

New sources canalready today replace fission power, it is unsafe, unwarranted and pointless toperuse something that can literally blow up in out face and kill us.

In thefuture use of solar or wind power and maybe someday fusion power will causenuclear fission power to become obsolete. Science