

**From:** Michael Masnik  
**To:** Charles Wilson  
**Date:** 3/1/05 3:01PM  
**Subject:** Questions

See attached. Thanks, Mike

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Subject: Questions  
Creation Date: 3/1/05 3:01PM  
From: Michael Masnik

Created By: MTM2@nrc.gov

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Questions for TVA.wpd	3538	03/01/05 02:59PM

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### Questions for TVA

1. Can you provide an annual estimate of solid waste to be generated by the plant. Start with estimates for units 2 and 3. Annual estimates, by unit, of high level waste (spent fuel) either by weight or by volume. What is your refueling interval? How will that number change with the power uprate. I would assume that all three units would be about the same. Also an annual estimate of low level waste shipped offsite to, I presume Barnwell, either by volume or weight for each unit. Not interested in solid waste shipments from unit 1 restart activities.
2. Still planning to use BLEU fuel? Still believe you do not need a license amendment?
3. What was the reference to the 32 ton crane trolley that was dropped between the reactor buildings?
4. Record of unit scrams for units 2 and 3 for the last 5 years.
5. I believe that your Decom Trust Fund Rept is due this March - is that the case? Can you make sure I am on the initial distribution so we can get the numbers in the Final SEIS.
6. Reference was made to "Amendment 2" which might be some local initiative. Any idea?

**From:** "Wilson, Charles L." <clwilson@tva.gov>  
**To:** "Michael Masnik" <MTM2@nrc.gov>  
**Date:** 3/3/05 9:59AM  
**Subject:** BFN Hydrazine Usage

Mike, the words below regarding hydrazine have been approved by cognizant individuals from two different chemistry groups in TVA Nuclear:

Hydrazine is currently used at BFN to control dissolved oxygen and thereby limit corrosion in two closed-loop systems: 1) in the auxiliary boilers, and 2) in the Turbine Building Closed Cooling Water System (building heat). For additions to the auxiliary boilers, a 35 percent solution of hydrazine in deionized water is contained in a 125-gallon tank inside the Turbine Building. Additions to the Turbine Building heating system are made via a different chemical addition tank. The only time the hydrazine can leave a closed system is during blow-down (i.e., a controlled release of pressurized hot water to allow replacement with clean water) or as the result of occasional leakage. However, hydrazine in the hot system water reacts very rapidly with the dissolved oxygen in the receiving Turbine Building sumps. Water from the sumps is processed by either the Thermex system or the Waste Filter/Waste Demineralizer prior to being routed to the outfall (DSN 001). In any case, it is converted to ammonia long before it gets to the Tennessee River through DSN 001. During a past five-year period of monitoring as required by a previous NPDES permit, no hydrazine was detected in the discharge from DSN 001, and the requirement to monitor releases for hydrazine was subsequently dropped prior to the current permit (issued February 1, 2001; expires January 31, 2006).



## RESPONSES TO QUESTIONS REGARDING PUBLIC MEETING TRANSCRIPT

**1A: Can you provide an annual estimate of solid waste to be generated by the plant. Start with estimates for Units 2 and 3. Annual estimates, by unit, of high level waste (spent fuel), either by weight or by volume. What is your refueling interval? How will that number change with the power uprate? I would assume that all three units would be about the same.**

BFN units are on a two-year refueling cycle. The core consists of 764 fuel assemblies. Currently, on average, they discharge about 300 assemblies at each refueling, and this number is expected to grow to approximately 368 as the result of Extended Power Uprate. Each fuel assembly contains about 203 kg of uranium oxide and 90 kg of structural metal (zircaloy cladding and channel duct, stainless steel upper and lower tie plates).

**1B: Also an annual estimate of low level waste shipped offsite to, I presume, Barnwell; either by volume or weight for each unit. Not interested in solid waste shipments from Unit 1 restart activities.**

### BFN UNITS 2 and 3 LLRW GENERATION in cubic meters

Fiscal Year	Dry Active Waste	Resins	Total
1999	560	94	654
2000	414	131	545
2001	485	120	605
2002	425	86	511
2003	509	85	594
2004	364	96	460

Notes: Values are for Units 2 and 3 only. All DAW (Class A) was shipped to Envirocare in Utah; all resins (Class A, B or C) were eventually shipped to Barnwell, S.C. but they may not have been shipped in the year they were generated. All TVAN >Class C radwaste is either fuel or fuel-related.

**2. Still planning to use BLEU fuel? Still believe you do not need a license amendment?**

See enclosed copies of articles on BLEU. Yes, TVA is still planning to load Blended Low Enriched Uranium (BLEU) in BFN Unit 2 during the spring 2005 refueling outage. A license amendment is not needed because the BLEU fuel has very small differences from existing fuel in terms of isotopics and is consistent with the existing license. BLEU will also be used in Unit 3 at a later date, but currently there are no plans to use it in Unit 1 once it is restored to operation (in 2007) because GNF out-bid FANP for the BFN 1 fuel fab contract, and currently only FANP can process the BLEU material.

**3. What was the reference to the 32 ton crane trolley that was dropped between the reactor buildings?**

See copy of OE19649 and newspaper article, included.

*OE19649 not included because of proprietary reasons. See NRC integrated inspection report 05000260/2004005, 05000296/2004005 dtd 28 Jan 05 ML 05031001*

**4. Record of scrams for Units 2 and 3 for the last 5 years.**

From January 1999 until present there have been 8 unplanned scrams while critical on Unit 2 (May 99; two in September 99; July 01; July 02; March 03; and two in July 04) and 4 unplanned scrams while critical on Unit 3 (April 00; May 00; November 04; February 05).

**5. I believe that your Decom Trust Fund Report is due this March – is that the case? Can you make sure I am on the initial distribution so we can get the numbers in the Final SEIS?**

The report is due to be signed out March 31 but, according to the individuals who prepare it, it will not be available before that time. It is expected that the report will show that TVA meets all requirements.

**6. Reference was made to "Amendment 2" which might be some local initiative. Any idea?**

The commenter was probably referring to Amendment 2 to the Alabama State Constitution regarding the right to education. See included newspaper articles. This has been a sensitive issue in the state, particularly with minorities.

**Wilson, Charles L.**

**From:** Wilson, Charles L.  
**Sent:** Wednesday, March 02, 2005 4:31 PM  
**To:** 'Michael Masnik'  
**Subject:** FW: A knoxville news article

Mike, this article appeared in the Knoxville News-Sentinel on February 23 of this year.

-----Original Message-----

**From:** Keys, T. A.  
**Sent:** Wednesday, March 02, 2005 10:50 AM  
**To:** Wilson, Charles L.  
**Subject:** A knoxville news article

### TVA, Y-12 Recycle Nuke Fuel into Power

#### AIADA summary

• Feb. 23--TVA is for the first time using nuclear fuel from the Y-12 nuclear weapons plant to download fuel this spring into its reactors at the Browns Ferry Nuclear Plant in northern Alabama and produce electricity, federal officials said Tuesday.

• "The first shipment is already at Browns Ferry," said TVA spokesman John Moulton.

• Nuclear Fuel Services of Erwin, Tenn., is processing the material or downblending the uranium from highly enriched uranium to low-enriched uranium.

Feb. 23--TVA is for the first time using nuclear fuel from the Y-12 nuclear weapons plant to download fuel this spring into its reactors at the Browns Ferry Nuclear Plant in northern Alabama and produce electricity, federal officials said Tuesday.

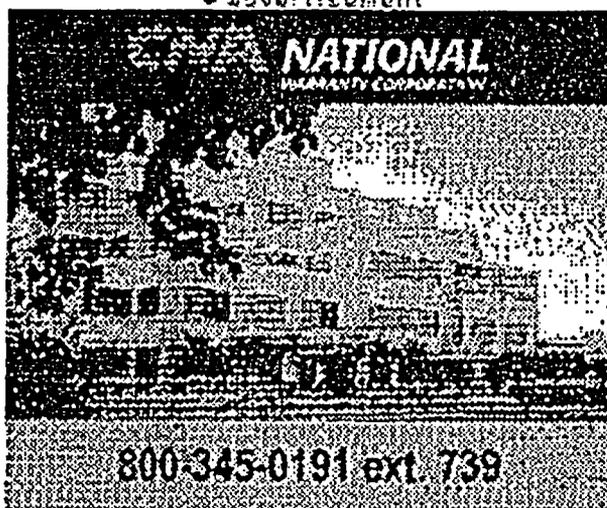
The fuel from Oak Ridge's Y-12 and other Department of Energy sites will be used several times to load fuel at Browns Ferry's Unit 2 reactor first, then the Unit 3 reactor. The Unit 1 reactor is under construction for a 2007 restart.

The move will save TVA 20 to 25 percent over the costs of buying uranium on the commercial market and eliminate the ability of the fuel to be used for nuclear bombs by potential terrorists.

"The first shipment is already at

Browns Ferry," said TVA spokesman John Moulton. "It is ready to be loaded into Browns Ferry Unit 2 following the Browns Ferry Unit 2 refueling outage."

Nuclear Fuel Services of Erwin, Tenn., is processing the material or downblending the uranium from highly enriched uranium to low-enriched uranium. The highly enriched uranium may be



used to make nuclear weapons while the low-enriched uranium is used for commercial nuclear fuel to produce electricity.

Once it is processed, it is converted to uranium dioxide powder and shipped to AREVA, the parent company of Framatome Advanced Nuclear Products in Richland, Washington, where it is made into fuel assemblies for shipment to Browns Ferry and insertion into the reactors.

The percentage of fissile U-235 in the fuel once it's blended is 3 to 5 percent. (The percentage of U-235 before the blending process is on average about 59 percent or enough to make a nuclear bomb).

The program helps to reduce the U.S. stockpile of weapons-usable fissile material.

"Converting this material to reactor fuel is by far the lowest-cost option for dealing with the material as compared to storage or disposal of the material as waste," said Bill Brumley, manager of the National Nuclear Security Administration's Y-12 Site Office, said in a statement.

"Downblending it and burning it as fuel in power reactors eliminates its use for weapons, lowers costs and provides a benefit to the public."

In addition to Y-12, the material is being transported from the Savannah River site in South Carolina, Idaho National Laboratory and BWX Technologies facility in Lynchburg, Va.

BWXT Y-12, which operates Y-12 for the NNSA, is coordinating the \$500 million program to downblend the uranium.

The Blended Low-Enriched Uranium project will eliminate more than 39 metric tons of highly enriched uranium. When blended to produce commercial power, it could provide electricity to every household in the United States for 122 days.

The project is providing 200 jobs in East Tennessee, most at the Erwin facility and about 30 at Y-12.

"This program benefits the public by putting this material to use rather than disposing of it as well as helping TVA to reduce the delivered cost of power to our customers from the projected savings in fuel costs," said TVA Chief Nuclear Officer Karl Singer in a statement.

Officials touted the program as an example of federal agencies partnering together for a common good.

For Y-12, the program reduces "overall safeguards and security requirements," addresses concerns about storage of the material and improves Y-12's storage capacity, the NNSA press release said.

Not everyone is happy with the BLEU process. Environmentalists

complain that Nuclear Fuel Services is not controlling wastes at the site and that contamination has been found in wells off the site.

"The primary complaint has been previous questions about potential water contamination," said Will Calloway, executive director of Tennessee Environmental Council.

TEC, Friends of the Nolichucky River, the Franklin Group of the Sierra Club, the Oak Ridge Environmental Peace Alliance and the Tennessee Environmental Council have filed suit to intervene with the U.S. Nuclear Regulatory Commission's granting of a license to allow Nuclear Fuel Services to process the uranium.

The environmentalists also seek a full Environmental Impact Statement on the effects of the plant. So far, only an Environment Assessment has been conducted which is not as thorough as an EIS.

NNSA is a semi-autonomous agency within DOE responsible for national security through the military application of nuclear energy.

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Wednesday, February 23, 2005

TVA Today Archive

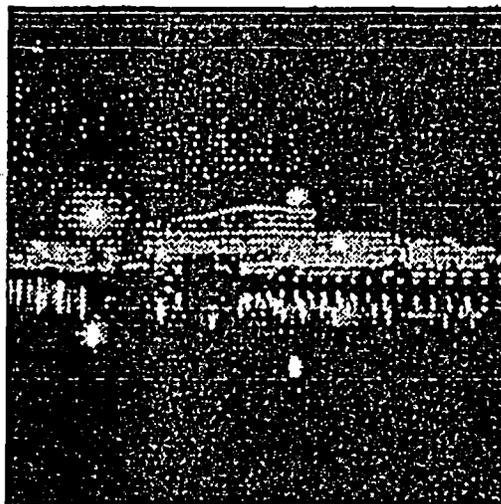


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## Browns Ferry To Use New Cost-Saving 'BLEU' Reactor Fuel

When Browns Ferry Nuclear Plant's Unit 2 reactor restarts after a planned refueling outage later this year, it will be operating with fuel made through a partnership between TVA, the Department of Energy and Areva. Areva is a service provider to the nuclear-power and electric industry.

The TVA, DOE and Areva effort developed after DOE expressed interest in converting uranium from its reactors into fuel that could be used in commercial reactors. TVA, DOE and Areva, along with Areva's subcontractor Nuclear Fuel Services of Erwin, Tenn., worked together to identify and complete the technical, logistical and regulatory



requirements that allow the DOE uranium to be processed into blended, low-enriched uranium fuel – also known as BLEU fuel. Without this process, DOE would have had to dispose of the uranium as waste. TVA projects that the use of BLEU fuel will save more than 20 percent in nuclear-fuel costs.

Browns Ferry Nuclear Plant, located in North Alabama

"This program benefits the public by putting this material to use rather than disposing of it, as well as helping TVA to reduce the delivered cost of power to our customers from the projected savings in fuel costs," says TVA Chief Nuclear Officer Karl Singer. "This is an excellent example of how federal agencies and contract partners can work together to provide safe, reliable and efficient generation to meet the energy needs of the Tennessee Valley and the nation in an environmentally sound manner."

Areva recently presented Browns Ferry and Nuclear Fuel Services with plaques commemorating the first shipment of BLEU fuel to Browns Ferry. TVA plans to purchase about 11 reloads of BLEU fuel for use at the plant.

"Areva is working across the globe to ensure a safe, reliable and environmentally sound power supply, and we think this work for TVA is a clear demonstration of what can be achieved toward that goal," says Areva BLEU Project Manager Len Newman.

*Contributed by Craig Beasley, Operations Communications*

NucNet News No. 42

### Browns Ferry Prepares For First Use Of Blended LEU Fuel

Surplus US weapons-origin fuel is to be used at the country's Browns Ferry nuclear power plant for the first time in spring 2005.

Blended Low-Enriched Uranium (BLEU) fuel assemblies will be loaded at Browns Ferry-2 during its refueling outage in the spring, to be followed by the loading of BLEU at Browns Ferry-3 later.

The US National Nuclear Security Administration (NNSA) announced details of the project on 22nd February 2005, which it said was within the framework of a Department of Energy (DOE) programme. The NNSA is a DOE agency that manages the 500 million US dollar (USD) BLEU project.

NNSA's partner in the project is the Tennessee Valley Authority (TVA) utility, which signed a contract in 2001 to accept Highly Enriched Uranium (HEU) from DOE sources and convert it into (LEU) material to generate electricity at its Browns Ferry plant in Alabama.

TVA spokesman John Moulton said that the cost to TVA of having the 39 tonnes of HEU down blended by Nuclear Fuel Services of Erwin, Texas, and the fabrication of the fuel assemblies by Framatome ANP of Richland, Washington, is approximately USD 165 million. He said that participation in the project consequently represents an approximate saving to TVA of 20%-25% compared to the cost of manufacturing a comparable amount of fuel from uranium purchased at current market prices.

Mr Moulton said the BLEU project HEU - which comes from US stockpiles of weapons-usable fissile material, including from the Y-12 National Security Complex at Oak Ridge, Tennessee - will be used to manufacture enough fuel assemblies for approximately 11 reloads at Browns Ferry-2 and -3.

Mr Moulton told NucNet that TVA currently has no plans to use the BLEU project fuel in Browns Ferry-1, whose restart is scheduled for 2007 (see News No. 343, 29th December 2003 and News No. 176, 17th May 2002), or at its Sequoyah and Watts Bar nuclear plants. However, regarding expansion of the BLEU project and TVA participation, he said: "There is always potential for that."

NNSA spokesman Steven Wyatt told NucNet that the NNSA expects the total amount of HEU within the agreement with TVA to increase to 55 tonnes. But regarding further expansion of the project or the involvement of other utilities and commercial nuclear plants, he said: "There are no plans at this point to go beyond the current TVA agreement unless another quantity of (HEU) material is declared surplus sometime in the future."

The NNSA is hailing the BLEU project as both a commercial and security success, saying that the cost of converting the surplus HEU to reactor fuel "is by far the lowest-cost option for dealing with the material as compared to storage or disposal". NNSA's Y-12 site manager Bill Brumley added: "Down blending it and burning it as fuel in power reactors eliminates its use for weapons, lowers costs and provides a benefit to the public."

Source: NNSA / TVA



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### Constitution rally cranks up volume on reform

Sunday, February 27, 2005

The Associated Press

ANNISTON - Supporters of Alabama constitution reform collected signatures at an Anniston forum on a petition calling for a vote on the issue.

Jacksonville State University history professor Harvey Jackson said Alabamians historically have had to be angry to respond to an issue. He urged the forum audience to get others "cranked up."

"Alabamians for constitution reform have not been able to convince the people that the constitution is the enemy of the state and of the people," Jackson said.

About 40 people attended the Thursday night event. ▼ Advertisement

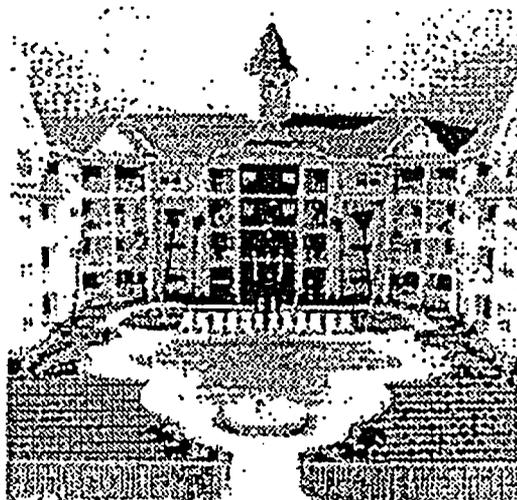
Jackson and other supporters of constitutional reform told the audience that the current constitution was designed in 1901 to keep political power away from blacks and poor whites.

That argument needs to be presented to the general public in a way that makes them angry, Jackson said.

Josh Parker of Jacksonville, who watched the forum, said he agrees that a new approach to the reform issue is needed.

"We need to be less polite and less diplomatic," Parker said.

Another observer, Brian Reed of Anniston, called the current state constitution



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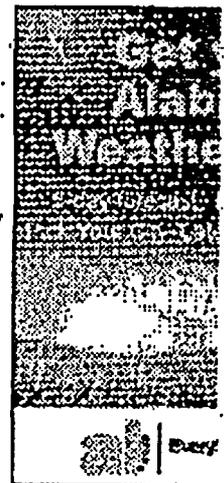
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"embarrassing," and said the state needs a new tax system and stronger local governments.

Reed criticized the current document's 772 amendments.

Anniston-Calhoun County NAACP President Randy Kelley said blacks would benefit from a constitution that better supports education.

"It's not a party issue," he said. "It's about the whole state."

The forum was sponsored by the Calhoun County chapter of Alabama Citizens for Constitutional Reform and the Greater Birmingham Ministries Constitutional Reform Education Campaign.

Mark Berte, project manager for the education campaign, said he's traveling to Alabama counties to muster support for reforming the constitution.

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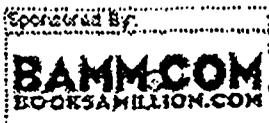
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## Overkill, but we'll take it

Sunday, February 27, 2005

There's the fact that removing language from the 1901 Alabama Constitution which says nothing "shall be construed as creating or recognizing any right to education or training at public expense" doesn't create that right.

There's a 1996 constitutional amendment that prevents state court judges from ordering state spending on schools without approval of the Legislature.

There's a 2002 state Supreme Court ruling saying it's up to the Legislature and not courts to fashion any sort of remedy to school problems.

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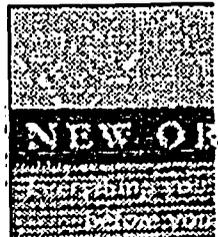
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None of that was good enough for naysayers who claimed that passing Amendment 2, which would have removed segregation-era language from the constitution, would open the door to massive tax increases for schools.

So maybe a new provision in the revised Amendment 2 legislation will convince them, even though it strikes us as overkill.

The provision reads: "Nothing in this amendment, or in the Constitution of Alabama of 1901, shall be interpreted by any judicial authority to require an increase in taxation." The state Senate voted 32-0 Tuesday to approve the revised Amendment 2 legislation.

Frankly, we'd be fine with a provision that threatened judges with hanging by their thumbs if they even thought of a tax increase, if that would convince voters to remove the offensive language from the constitution. It's not that Alabama schools couldn't stand more money, since their per-pupil funding ranks among the nation's worst; it's just that Amendment 2 had nothing to do with taxes, in spite of what the Roy Moores of the world claimed.

The House, which has at least two competing versions of Amendment 2 - one that removes the 1956 language concerning a right to education at public expense, and one that doesn't - should quickly adopt the Senate-passed bill and send it to the people of Alabama for a vote.

Short of an expensive special election, the vote couldn't take place any sooner than the June 2006 primary. But the Legislature can at least help Alabama's economic developers counter competitors using Amendment 2's defeat to their advantage.

This whole episode is another sorry chapter in Alabama's long, sordid history of successful demagogues. Amendment 2 was never about anything more than getting rid of racist language in the state's fundamental charter. The language concerning poll taxes and "separate but equal" schools, while no longer in force thanks to federal court orders, is downright embarrassing.

If the new safeguard in the Senate's version of the revised Amendment 2 legislation doesn't convince the naysayers, then there's more to their opposition than just an irrational fear of phantom tax increases.

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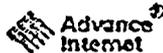


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Decatur Daily  
11-07-04

## **TVA hurts credibility when officials cover up**

The first news report of a fire at Browns Ferry Nuclear Plant in March 1975 noted there had been a small blaze. Nothing major, just a routine incident in which all the safety emergency systems performed properly and the units shut down as planned.

That, of course, was not the severity of the fire that critics say came close to being the first meltdown of a nuclear plant.

Browns Ferry workers, as it turns out, didn't handle the situation well.

Another incident at the plant that occurred Oct. 24 jogged memories of that event of nearly 30 years ago.

TVA and the Nuclear Regulatory Commission left it to whistleblowers to report that a 32-ton crane trolley fell and broke. The Union of Concerned Scientists made the incident public because, the group said, neither TVA nor the NRC had done so.

The crane trolley fell nearly 3 feet as workers lowered it to the refueling floor. TVA told the scientist group it is investigating to see if the fall damaged the structural integrity of the building that's in an area between the three reactors.

Browns Ferry had a near meltdown in 1975 as the result of an engineer allowing a candle flame to get too close to foam used to chink air leaks. The flame spread quickly and affected operators' ability to bring things under control.

A 32-ton crane trolley falling onto the refueling floor of a building where nuclear materials could have been present sounds serious.

TVA and NRC say they are investigating and will take proper action to see that a similar incident doesn't happen again. But the manner in which the public received the news about the accident suggests neither federal agency was in any hurry to get the information out.

That, of course, leaves people to wonder why and fear the worst.

Safety procedures and training are vastly better today, but TVA's willingness to cover up apparently hasn't changed much.