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May 11, 2010

Mr. Kevin L. Vaughn
Accounting Branch Chief
Division of Corporation Finance
United States Securities and Exchange Commission
Mail Stop 3030
100 F Street, N.E.
Washington, D.C. 20549

RE: A. O. Smith Corporation
Form 10-K for the year ended December 31, 2009 filed February 26, 2010
Definitive Proxy Statement on Schedule 14A filed March 2, 2010
File No. 1-00475

Dear Mr. Vaughn:

This letter sets forth the responses of A. O. Smith Corporation (our "Company") to the letter of the Securities and Exchange Commission (the "Staff") dated April 27, 2010, with respect to our Company's Annual Report on Form 10-K for the year ended December 31, 2009 (the "Form 10-K") and our Company's proxy statement filed on Schedule 14A on March 2, 2010 ("Schedule 14A" or "proxy statement"). To facilitate your review, our responses below include the Staff's original comments and have been ordered using numbers that correspond with the order set forth in the Staff's letter.

Form 10-K for the year ended December 31, 2009

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 17

1. In future filings, please revise your MD&A to provide an overview that includes a balanced, executive-level discussion that identifies the most important themes or other significant matters with which management is concerned primarily in evaluating the company's financial condition and operating results. Your overview should discuss material business opportunities, challenges and risks, such as those presented by known material trends and uncertainties, on which the company's executives are most focused, and the actions they are taking in response to them. For example, we note your discussion of gross margins and increased commodity costs in your fourth quarter earnings call on January 26, 2010. For further guidance on the content and purpose of the "Overview," see Interpretive Release No. 33-8350 on our website.

Company Response:

In future filings we will revise the MD&A section of our Form 10-K to provide an overview section consistent with your suggestion addressing economic and industry-wide factors and other significant matters impacting our Company's financial condition and operating results.

Note 1 – Organization and Significant Accounting Policies, page 31

Earnings per share of common stock, page 36

2. We note that you have two classes of stock Class A Common Stock and Common Stock. Please revise this disclosure in future filings to provide a clear description of how you calculate earnings per share considering your two-class structure. Refer to FASB ASC 260-10.

Company Response:

As disclosed in Footnote 10 - Stockholders' Equity on page 41 of our Form 10-K, Class A Common Stock and Common Stock have equal dividend rights which precludes the need to use the two-class method of calculating EPS. In future filings, we will include the information from Footnote 10 in Footnote 1 in the earnings per share of common stock disclosure.

Note 2 – Acquisitions, page 37

3. We note that you acquired an 80% interest in Tianlong Holding Co. Ltd.

Additionally we note that you in the process of finalizing an appraisal from a third-party which could affect your purchase price allocation. Please describe to us the nature and extent of the role played by the valuation firm in determining the amounts included in your financial statements. In this regard, we also refer you to the guidance provided in Question 141.02 of the Compliance and Disclosure Interpretations on Securities Act Sections, which can be found at <http://www.sec.gov/divisions/corpfin/guidance/sasinterp.htm>, which explains the circumstances under which a valuation firm would be named and its consent included in registration statements, including those into which you incorporate your Form 10-K by reference.

Company Response:

As you have noted, our Company is still only in the process of finalizing the allocation of purchase price for the Tianlong Holding Co. Ltd acquisition. Management will be responsible for the purchase price allocation, and as part of doing so, we will consider the third party appraisal. We will in future filings exclude any reference to the third party appraisal.

Note 15 – Operations by Segment, page 51

4. We note that your long-lived assets by geographic location include other intangible assets. Disclosure of long-lived assets by geographic area should present tangible assets only and should not include intangibles. Please revise your disclosures in future filings to comply with paragraph 280-10-55-23 of the FASB Accounting Standards Codification.

Company Response:

We will revise our disclosure in future filings to exclude intangible assets from the disclosure of long-lived assets by geographical area to comply with ASC 280-10-55-23.

Item 11 Executive Compensation, page 56

5. We note your discussion under “Consideration of Risk” on page 15 of your proxy statement which you incorporate by reference into your Form 10-K in response to Item 402(s) of Regulation S-K. Please describe the process you undertook to reach the conclusion that your compensation policies and practices for your employees are not reasonably likely to have a material adverse effect on the registrant.

Company Response:

The Personnel and Compensation Committee met on three separate occasions, October 12, 2009, December 7, 2009 and February 8, 2010, to discuss the SEC's new rules concerning analysis of risk associated with compensation plans and practices. As part of this review, the Committee considered the risk associated with our Company's individual compensation policies and practices, including the situations set forth in Item 402(s) of Regulation S-K. Specifically, the Committee analyzed compensation at our two business units, Water Products and Electrical Products, and among other things, concluded that neither business unit carries a significant portion of our risk profile; has significantly different compensation structure from the other business unit; pays compensation expense as a significant percentage of the business unit's revenue; or varies significantly from the overall risk and reward structure of our Company. The Committee concluded that neither our operating environment nor our incentive programs foster undue risk.

By virtue of the process, the Committee concluded at its February 8, 2010 meeting that our compensation policies and practices are not reasonably likely to have a material adverse effect on our Company. While not required to expressly state our findings, our Company chose to state our findings to this effect on page 15 of our proxy statement.

6. We note from your discussion under "Base Salary" on page 21 of your proxy statement and "Long-Term Incentive Compensation" on page 23 of your proxy statement that you incorporate by reference into your Form 10-K that you target base salaries to the median of surveyed companies and target the total value of all long-term incentive components to the median level of surveyed companies. In future filings, please include an analysis of where actual payments under each element of compensation actually fell within the targeted range. If, in future filings, any of your named executive officers are compensated at levels that are materially different from the targeted levels of compensation, please also provide discussion and analysis as to why. In addition, in your applicable future filings, please identify the peer companies you use.

Company Response:

In future filings we will include an analysis of where actual payments under each element of compensation actually fell within the targeted range. If any of our executives are compensated at levels that are materially different from the targeted levels of compensation, we will provide a discussion and analysis as to why.

You also have asked us to identify our peer companies in future filings. Please be advised that we do not rely on a specific group. Rather, as indicated on page 20 of our proxy statement as part of our compensation process, we relied on salary data from the 2008 Tower Perrin Executive Compensation Database. Towers Perrin utilized a broad database of approximately 800 companies. After eliminating financial services, health care and energy services, there are approximately 400 companies in the database. In addition, as noted on page 20 of our proxy statement, Towers Perrin also considered data available through the Watson Wyatt Top Management Comp Calculator.

In working with Towers Perrin, we played no role in selecting the companies for which the data is pulled. Participating companies submit pay information for incumbents in positions that correspond to Towers Perrin's pre-defined position descriptions, and also organization information, such as revenues for each position. For instance, a participating company submits corporate revenues for corporate-level positions and business unit revenues for business unit positions.

Towers Perrin consolidates survey information into its database and, to protect the confidentiality of individual company data, deletes company-specific identifiers and reports by position, rather than company. In other words, once information is submitted, it cannot be linked back to a particular company, and therefore, we cannot identify specific companies as providing the information we utilize from this database.

For our Company, Towers Perrin performed a regression analysis to reflect base pay levels of an organization with \$2.5 billion in revenue; the business unit positions were regressed to \$1.5 billion and \$1.0 billion in revenue for the Water Products and Electrical Products business units, respectively. Target bonus and long-term incentive multiples, which are gathered as a percentage of competitive base salary, were determined from all companies in Towers Perrin's general industry database with revenues between \$1 and \$3 billion.

We recognize the importance of peer group information to investors. While the process discussed above precludes us from identifying particular companies in a peer group, in future filings we will provide more detailed information as to the process utilized by Towers Perrin (now known as Towers Watson) to gather information and perform its regression analysis.

7. We note from your discussion under "Annual Incentive Compensation" on page 22 of the proxy statement that you incorporate by reference into your Form 10-K that you have not disclosed the specific target for Return on Performance Assets to be achieved in order for your named executive officers to earn their respective annual cash incentive payments. Please provide such disclosure in your future filings, as applicable. To the extent you believe that disclosure of such information, on a historical basis, would result in competitive harm such that the information could be excluded under Instruction 4 to Item 402(b) of Regulation S-K, please provide us with a detailed explanation supporting your conclusion. To the extent that it is appropriate to omit specific targets or performance objectives, you are required to provide appropriate disclosure pursuant to Instruction 4 to Item 402(b) of Regulation S-K. Refer also to Question 118.04 of the Regulation S-K Compliance and Disclosure Interpretations available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>. In discussing how difficult or likely it will be to achieve the target levels or other factors, you should provide as much detail as necessary without disclosing information that poses a reasonable risk of competitive harm.

Company Response:

We disclosed on pages 22 and 23 of our proxy statement that the annual cash incentive awards payable to our operating segment executives were based in part on operating segment Return on Performance Assets. We recognize the importance of providing performance-related information to our stockholders. However, we are careful not to provide the marketplace with information that may put us at a competitive disadvantage. In an effort to balance these interests, we disclosed in our proxy statement: (i) the performance criteria considered together with the relative weight such criteria received; (ii) the range of the potential cash incentive award as a percentage of executive's annual base salary; (iii) the target cash incentive award as a percentage of executive's annual base salary; and (iv) the actual cash incentive award earned.

On the basis of the information we provided, we believe that stockholders could determine, based on the actual award made to an executive officer, the relative level of performance of that officer without indicating to our competitors and customers the specific quantitative targets for operating segment Return on Performance Assets. We concluded that we were not required to disclose these targets because such information constitutes confidential commercial or financial information, the disclosure of which would result in competitive harm to us. We have set forth our analysis supporting this conclusion below.

We note that for operating segment executives whose annual cash incentive award was based in part on operating Segment Return on Performance Assets, we also disclosed on page 23 of our proxy statement how difficult it will be for such executives to achieve the undisclosed target levels. In addition to stating that these targets "were set at levels that are difficult to achieve, but with the expectation they are attainable," we explained that in the past three years these executives had met or exceeded their targets only 33% of the time and none had been paid at their maximum level during this time, thereby providing quantitative detail on historically how difficult it had been to achieve the undisclosed target levels.

Supplemental Analysis of Omission of Specific Quantitative Targets

Under 17 C.F.R. §200.80, the rule adopted by the Securities and Exchange Commission under the Freedom of Information Act (5 U.S.C. §552(b)(4)), "commercial or financial information obtained from a person and privileged or confidential" will generally not be published or made available to any person. This rule can be broken into three tests: (i) whether the information is commercial or financial; (ii) whether the information was obtained from a person; and (iii) whether the information is privileged or confidential. The specific quantitative targets for operating segment Return on Performance Assets constitute commercial or financial information and this information is obtained from a person outside of the government. As set forth below, we believe that these targets are "confidential" within the meaning of the test adopted by courts and relied upon by the

Commission in determining whether information for which confidential treatment is sought is “confidential.” The Commission, in proposing revisions to Rule 406 under the Securities Act of 1933, as amended, stated that the test for confidentiality under the exemption provided in 5 U.S.C. §552(b)(4) upon which the Commission relies is as follows:

[C]ommercial or financial matter is ‘confidential’ for purposes of the exemption if disclosure of the information is likely to have either of the following effects: (1) to impair the Government’s ability to obtain necessary information in the future; or (2) to cause substantial harm to the competitive position of the person from whom the information was obtained.

Confidential Treatment under the Securities Act of 1933, Securities Release No. 6495, 29 SEC Docket 54 (November 1, 1983) (*quoting National Parks & Conservation Ass’n v. Morton*, 498 F.2d 765, 770 (D.C. Cir. 1974)); *see also Gulf Western Indus., Inc. v. United States*, 615 F.2d 527 (D.C. Cir. 1979). We believe public availability of specific quantitative targets for operating segment Return on Performance Assets on which annual incentive compensation is based in part would cause substantial harm to our competitive position and is not necessary for the protection of investors.

We are a leading manufacturer of water heating equipment and electric motors, serving a diverse mix of residential, commercial and industrial end markets principally in the United States with a growing international presence. As discussed in the Form 10-K, we sell all of our products in highly competitive markets. We compete against manufacturers located in the United States and throughout the world. We also face competition from some original equipment manufacturers to whom we sell our electrical products and from our customers and the end users of our products, who continually assess any costs that could be reduced by vertically integrating or using alternate sources for the products we manufacture. Some of our competitors may have greater financial, marketing, manufacturing and distribution resources than we have. Among other things, we compete in our targeted markets based on price of our products.

We currently report our financial results in accordance with GAAP and SEC regulations according to the segments in which we operate. Disclosure of additional financial metrics, such as operating segment Return on Performance Assets, will provide our existing and potential competitors and customers with valuable information about an operating segment’s operations and performance. In particular, competitors and customers may use this information to calculate our net investment in our operating segments as well as our return on such investment, which we do not and are not otherwise required to publicly disclose. Many of our competitors are not publicly traded and are not required to disclose this information.

We believe that providing this information to our existing and potential competitors and customers enables them to better estimate our product pricing and profitability models, which may limit or eliminate any competitive advantage of our margins and performance. We believe our competitors would use this information to better compete based on the price of our products, which may provide existing competitors with an incentive to devote additional resources to such businesses or new competitors to enter such businesses and would result in increased competition from existing and potential competitors. We further believe that our customers would use this information to seek price reductions, which would result in increased difficulty negotiating new agreements with existing or potential customers on favorable pricing terms to us.

Furthermore, operating segment Return on Performance Assets, upon which annual incentive compensation is partially based, has not previously been made publicly available and, to the best of our knowledge, will not be required to be made public by any other government or regulatory authority. Operating segment Return on Performance Assets is not currently publicly available from any other source.

Conclusion

We believe that what is important to stockholders is that these performance criteria are being considered, the relative weight that they have, and the range of compensation, all of which we have disclosed in our proxy statement. However, we believe that the disclosure of additional financial information and metrics, such as operating segment Return on Performance Assets, will provide competitors with additional information that they may use to compete with us with respect to pricing and in the sales process. Furthermore, our customers may use such information to our detriment in the process of negotiating contracts with us.

Because we believe public disclosure of specific quantitative targets for operating segment Return on Performance Assets would cause substantial harm to our competitive and financial position, because such information has not previously been made publicly available and, to the best of our knowledge, will not be required to be made public by any other government or regulatory authority, and because such information is not currently publicly available from any other source, we believe we meet the test the Securities and Exchange Commission relies upon in determining whether disclosure of otherwise confidential information would likely cause us substantial harm to our competitive position, and therefore we are not required to disclose specific quantitative targets for operating segment Return on Performance Assets in our proxy statements. *See National Parks & Conservation Ass'n v. Morton*, 498 F.2d 765, 770 (D.C. Cir. 1974); *see also National Parks & Conservation Ass'n v. Kleppe*, 547 F.2d 673, 682-83 (D.C. Cir. 1976) (no actual adverse effect on competition need be shown in determining whether disclosure of information under the Freedom of Information Act would cause substantial competitive harm to the person requesting confidential treatment); and *Critical Mass Energy Project v. NRC*, 931 F.2d 939 (D.C. Cir. 1991), *vacated & reh'g en banc granted*, 942 F.2d 799 (D.C. Cir. 1991), *grant of summary judgment to agency aff'd en banc*, 975 F.2d 871 (D.C. Cir. 1992).

Definitive Proxy Statement on Schedule 14A filed March 2, 2010 - Our Leader Structure, page 14

8. We note your disclosure in “Our Leadership Structure” in response to Item 407(h) of Regulation S-K. Please tell us whether the non-management “presiding director” you describe in the third paragraph is an “independent director” as Item 407(h) describes. For example, it appears you have some non-management directors who may not be independent. Please revise your future filings as appropriate.

Company Response:

As discussed below, the presiding director is an independent director in accordance with Item 407(h) of Regulation S-K.

In paragraph 3 of the “Our Leadership Structure” section, on page 14 of our proxy statement, we noted that the presiding director rotates on an annual basis in accordance with our Corporate Governance Guidelines. This process is discussed in greater depth in the section “Governance of our Company, the Board of Directors” on page 9 of our proxy statement. There, we noted that the presiding director at such meetings rotates on an annual basis among the chairpersons of the following Committees in the following order: Nominating and Governance Committee, Audit Committee, and Personnel and Compensation Committee. The presiding director during the period April, 2009 to April, 2010 has been the Chairperson of the Audit Committee, and for the period April, 2010 to April, 2011 will be the Chairperson of the Personnel and Compensation Committee. On page 14 of our proxy statement, we also identified the Chairs of each committee, namely Ronald D. Brown as Chairperson of the Nominating and Governance Committee, Gene C. Wulf for the Audit Committee and William F. Buehler for the Personnel and Compensation Committee. Finally, on page 9 of our proxy statement, we disclosed that we analyzed the independence of directors and, in particular, we determined that Messrs. Brown, Wulf and Buehler are each independent.

For future filings, we will add a sentence to the section in “Our Leadership Structure” which specifically addresses the independence of the presiding director.

Our Company acknowledges as follows: it is responsible for the adequacy and accuracy of the disclosure in the Annual Report on Form 10-K for the year ended December 31, 2009 and our Company’s proxy statement filed on Schedule 14A on March 2, 2010; Staff comments or changes to disclosures in response to Staff comments do not foreclose the Commission from taking any action with respect to the Annual Report on Form 10-K for the year ended December 31, 2009 and our Company’s proxy statement filed on Schedule 14A on March 2, 2010; and our Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

May 11, 2010

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Please direct any questions or comments regarding the foregoing responses to the undersigned at (414) 359-4008.

Very truly yours,

/s/ Terry M. Murphy

Terry M. Murphy

Executive Vice President and Chief Financial Officer

A. O. Smith Corporation

cc: Mr. Eric Atallah, Staff Accountant
Ms. Allicia Lam, Staff Attorney
Mr. Jay Mumford, Reviewing Attorney
Mr. Martin James, Senior Assistant Chief Accountant